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Development of Website-Based Interactive E-Modules towards Volleyball Learning in Junior High School Students

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ABSTRACT: Website-based learning is one form of learning modification needed to maximize the teaching and learning process. This study aims to: (1) Develop website-based interactive E-Module learning media on volleyball learning materials for grade VIII students of SMP Negeri Megang Sakti, Musi Rawas Regency, South Sumatra Province. (2) Knowing the feasibility of website-based interactive E-Module learning media on volleyball learning materials for grade VIII students of Megang Sakti State Junior High School, Musi Rawas Regency, South Sumatra Province. The research conducted was research and R&D development Validation trials were carried out by 3 expert lecturers. 2 expert lecturers in the field of material and 1 expert lecturer in the field of media. The small-scale test in this study used a sample of 15 students taken from students of SMP Negeri Sumber Rejo, a large-scale test using a sample of 30 students taken from students of SMP Negeri Pagar Ayu. This research was conducted in Musi Rawas Regency, South Sumatra Province, with random sampling and data taken from Megang Sakti State Junior High School, Musi Rawas Regency, South Sumatra Province. The data analysis techniques used are quantitative and qualitative analysis. The results of this study show: (1) Development of website-based interactive E-Modules on volleyball learning materials for grade VIII students of SMP Negeri Megang Sakti through five stages, namely the analysis stage, design stage, development stage, implementation stage, and evaluation stage; (2) the feasibility of the website-based interactive E-Module media is assessed based on: (a) The material and media validator aspect obtained an average value of 4.43 and a percentage of 89%, which means that it is included in the very feasible category. (b) Small trials obtained an average score of 4.55 and a percentage of 91% which means that it is included in the very decent category. (c) Large trials obtained an average score of 4.45 and a percentage of 89% which means that it is included in the very decent category. (d) Product feasibility test obtained an average value of 4.52 and a percentage of 90% which means that it is included in the very feasible category. Thus, it can be concluded that the website-based interactive E-Module learning media on volleyball learning materials is feasible to use.

KEYWORDS: E-Module Interactive, Volleyball, Website-Based, Student.

I. INTRODUCTION

Education is one of the forums that has an important role in the progress of the nation and state from all aspects. Education means a dynamic force in the life of each individual, which affects physical development, mental development, social development, as well as the development of morality. Education is a gradual, programmatic, and continuous activity [1]. The meaning of education itself according to Ki Hajar Dewantara is the effort to advance the ethics, mind, and body of children, in order to advance the perfection of life, namely living and living children in harmony with nature and society. Education is the most important thing, because good and quality education allows a person to live anywhere [2].

When discussing education, of course, it is closely related to activities and also the teaching and learning process. According to Wahdaniah [3] the increase in potential and development that occurs in students is obtained through a continuous learning process. Learning is a change in behavior that occurs in individuals, who previously could not become able. The teaching and learning process carried out by teachers and students is usually carried out at school or through direct interaction without any intermediary media and of course with teaching media, textbooks, teaching modules and others that have been prepared by teachers in accordance with the learning model used.

Physical education is a pedagogical process aimed at improving the morphological and functional state, mental and volitional aspects of the human body, improving the quality of knowledge, skills, abilities, achieving high results in work and homeland defense [4]. Currently, physical education learning is still underdeveloped because textbooks are lacking and learning packaging

is still less innovative, making students less enthusiastic in the learning process of physical education lessons [5]. According to [6] currently traditional teaching concepts can no longer meet the needs of physical education achievement optimally, new creativity and innovation are needed in learning so that the quality of physical education learning can be carried out properly and can meet the needs of educational achievements that are growing day by day.

Teachers are required to be creative and innovative in packaging physical education learning with various concepts and media that can be used so as to make students more optimal in learning. The more developed the times in the era of globalization, the more facilities and infrastructure that can support the physical education learning process. Technology can act as a platform to encourage creative learning and innovative teaching [7]. In the digital era like today, many things are digital-based where technology is increasing and the education system can be ready to face challenges in the digital era itself [8]. The use of digital technology to support the teaching and learning process in the world of education has grown rapidly following the times, especially physical education learning can also be supported by digital technology in the teaching and learning process. Digital technology can cause increased interest in learning students such as physical education learning [9].

The success of an educational goal depends on how the teaching and learning process experienced by students. A teacher besides being required to be careful in choosing and applying teaching methods that are in accordance with the goals to be achieved, is also able to choose media that is in accordance with the material to make it easier to deliver the material, for that media is needed that can cause the attraction of students in absorbing the material. One of the media that can be developed is a learning module in the form of an electronic module (E-Module).

Interactive E-Module is one type of teaching material module that can be used in physical education learning. According to [10] who said that learners need to develop independent learning, critical thinking, and effective use of information technology. Using E-Modules can help teachers and students in the implementation of the teaching and learning process. Because of the advantages when using E-Module media during the teaching and learning process, the E-Module will display interesting content and material in it, such as students will be spoiled with displays containing animations, images, audio visuals, videos, and quizzes that can trigger strong motivation and desire for students to learn. It is proven by pre-existing studies, that this E-Module is suitable to be used as a learning medium that can help teachers and students in the teaching and learning process at school and outside school because this E-Module can be accessed anywhere using media tools such as mobile phones, laptops, computers, and other media tools provided there is internet access.

Based on observations made by researchers at SMPN Megang Sakti District on the learning process, it was found that many teachers as teachers still use conventional methods and media in teaching teaching teaching materials, especially in PJOK subjects in Volleyball Learning Materials. As a result of students learning using conventional media in the form of printed modules and lecture-style methods to make the material presented boring. The disadvantage is that if students are not equipped with interesting modules from the material presented, the effect is that students will have difficulty repeating the material in the learning process.

The print module is less able to present a material that uses simulation. Another observation at SMPN Megang Sakti is the weakness of the print module, one of which is that it is less able to display some material using simulations, so that students become bored and monotonous because they are still presented with analog even though everywhere is spoiled with digital products. Print modules make the learning process less interesting, less interactive and yet able to convey historical messages through images and videos.

The results of interviews with several class VIII students, PJOK learning so far tends to use lecture methods and ordinary printed modules in the learning process, so that students feel bored, have difficulty understanding conventional modules and are less motivated during the learning process. Therefore, researchers want to develop conventional modules into interactive E-Modules that aim to make students become motivated and willing to read material supported by audio visuals, animations, images, videos, and quizzes. The development of electronic module prototypes as an independent learning resource in learning PJOK subjects Volleyball Learning material, it is hoped that the learning orientation will no longer be teacher centered but lead to a student-centered learning system.

Competence of graduates who are able to develop a concept of visual communication in digital media. The focus of development in this research lies in the form of presentation of independent learning materials in which there is material management, display and learning control. Learning resources in the form of E-Modules are expected to attract the attention and interest of students so that they are motivated to learn, and also with the existence of learning resources in the form of E-Modules will help teachers in delivering learning material. And another reason that strengthens researchers to develop conventional modules to E-Modules is because SMPN Megang Sakti is also still netted in the 3T area (Underdeveloped, Frontier, and Outermost), but even though it is still netted in the 3T area for the internet network there is already a 4G network, therefore researchers intend to develop this technology-based media so that in the learning process can also take advantage of advanced technology at this

time. The novelty of this research is the creation of a website-based interactive E-Module learning media development product in which there is volleyball learning text material and is supported by audio visuals, animations, images, videos, and interactive quizzes to support the learning process of students in PJOK learning which refers to the physical education learning curriculum of sports and health that is currently in effect at the Nefgri Megang Sakti Junior High School class VIII education unit i.e. curriculum 2013.

II. MATERIAL AND METHOD

This research is a development research (research and development) means that this research is product-oriented research. Research and development methods are methods used to produce certain products and test the effectiveness of those products. Research and development in learning is a process used to develop or validate products used in education and teaching.

The method in this study uses the ADDIE model (Analyze, Design, Develoment, Implementation, Evaluation). This model was chosen because it is very often used to describe a systematic, instructional approach. This development can be interpreted as an effort to expand where to bring a situation or a situation in stages to a more perfect or more complete situation with a better situation [11].

This E-Module learning development procedure uses the development procedure proposed by [11]. The development procedure is divided into 5 steps, namely (1) analysis, (2) design, (3) development, (4) implementation, and (5) evalution with the ADDIE model.

1) Analysis

a) Problem Analysis

At this stage, researchers make observations and observations to schools to find problems that have been complained by students in volleyball learning. This is done by conducting interviews with most grade VIII students to find out the learning difficulties faced in PJOK subjects based on the level of material difficulty, how to teach teachers, and supporting media used by teachers when teaching. In addition, researchers also conducted questions and answers directly to teachers teaching PJOK subjects at SMP Negeri Megang Sakti to find out the difficulties of students in understanding the materials in PJOK subjects seen from the teacher's view and the grades obtained by students.

b) Material Analysis

Based on the results of interviews conducted with PJOK subject teachers at SMP Negeri Megang Sakti, it was found that volleyball material had a more difficulty level felt by students. According to observations, most students have difficulty understanding the components in the basic volleyball technique. In addition, the thing that makes volleyball material difficult is because of the many basic techniques that must be memorized by students, monotonous learning (still in the form of lectures and demonstrations from teachers), and the absence of innovative learning media so that learning seems boring and not interesting to follow. So it is necessary to analyze the basic volleyball technique material according to the grade level.

c) Needs Analysis

Needs analysis conducted with a series of observations in class VIII to determine the needs of teaching materials as learning resources, student needs, and teacher needs. The results of this needs analysis will be used as reference material needed in the formulation of concepts or designs in the development of website-based interactive E-Module learning media on basic volleyball technique material.

d) Student Character Analysis

Researchers analyze the character of students to find out how students are studied in the classroom, how students learn, what obstacles students face when learning. Analysis of student character is carried out so that the learning media to be developed can be in accordance with the needs of students in learning.

e) Project Development Analysis

The project management plan can be tailored to the development needs of each research. In this research and development, the things that are managed are development costs, development time and product specifications produced.

f) Data Analysis

Expert validation Data analysis expert validation carried out is to provide questionnaires to media and material experts to get suggestions and input that become a reference in improving website-based interactive E-Module learning media at SMPN Megang Sakti school, Musi Rawas Regency, South Sumatra Province.

2) Design

Design is the second stage of the ADDIE model. At this stage, clarification is needed about the specifications of the product designed, so that the product can achieve the expected goals. The design stage is closely related to designing assessment

instruments, designing observation sheets, to the process of making E-Module media to be used. After that, the researcher prepares an evaluation instrument and its evaluation procedure.

3) Development

After the planning stage, the researcher carries out the next stage, namely the development stage. In the development stage there are 3 activities as follows:

a) Product manufacturing

Developers collect supporting materials such as animation, sound, video, images and others. Then developed learning media in the form of a website using the Heyzine Flipbook application.

b) Validation

In validation, there is material expert validation and media expert validation. The validation is divided into two, namely: Material expert validation and Media expert validation.

c) Revision

After the validation process, the product is revised based on comments and suggestions from material experts and media experts to make it attractive and in accordance with the needs of students.

4) Implementation

Implementation is a real step to implement the learning system that we are creating. That is, at this stage everything that has been developed is installed or set in such a way as to suit its role or function so that it can be implemented. The implementation or delivery of learning materials is the fourth step of the ADDIE learning system design model.

5) Evaluation

Evaluation is the process of seeing whether the learning system being built is successful, in accordance with initial expectations or not. Actually, the evaluation stage can occur at any of the four stages above. The evaluation that occurs in each of the four stages above is called formative evaluation, because the purpose is for revision needs. Evaluation is the final step of the ADDIE learning system design model. Evaluation is a process carried out to provide value to the learning program.The subjects involved in this study were 2 material experts (2 lecturers of Physical Education, Faculty of Sports and Health Sciences, Yogyakarta State University), 1 media expert (lecturer of Physical Education, Faculty of Sports and Health Sciences, Yogyakarta State University).The small-scale trial in this study was grade VIII students of Sumber Rejo State Junior High School which amounted to 15 students, while for large-scale trials there were 30 students of grade VIII SMP Negeri Pagar Ayu and feasibility trials were 30 students of grade VIII of SMP Negeri Megang Sakti.Data collection is carried out in several ways. The following data will be collected and data collection techniques used: a) Observation, 2) Questionnaire, 3) Documentation. The analysis of the data obtained in this study is the analysis of product services from experts and students as users. Learning using media and learning resources is carried out in accordance with the competence of the material that has been prepared. After the implementation of the Interactive E-Module, product analysis was carried out which developed data analysis techniques.

III. RESULT AND DISCUSSION

Result

The results of the finished development will be tested which validation to find out in terms of the feasibility of the product that has been made, for this product test itself is divided into 2 categories among them: Material validation test and media validation test. All of this aims to find out whether or not this product is feasible to be used in schools to help students in the learning and teaching process in the learning process in the current era which is very rapid development.The results of the development of interactive E-Module learning media in PJOK subjects for junior high school students are then validated by material experts and media experts to determine the quality of the products developed. The results are described as follows.

Table 1. Results of media development

Validation	Number of Values	Average Values	Percentage	Category
Material Validation I	70	4,64	93%	Very Worth It
Material Validation II	67	4,46	89%	Very Worth It
Media Validation	63	4,20	84%	Proper
Final grade	**4,43**	**89%**	**Very Worth It**	**Final grade**

Judging from the table above, the final validator assessment of the website-based Interactive E-Module developed has an average value of 4.43 and a percentage of 89% is in the very decent category. These results can be concluded that the development of the Interactive E-Module for PJOK learning volleyball material developed can be used with a little revision and tested.

Product trial results

This stage is when media trials that have passed the validity test (product feasibility) from media experts and material experts (revised). The trial conducted was aimed at grade VIII students of State Junior High School in Megang Sakti District. This stage can also be part of the implementation stage, this stage is divided into two, namely:

1) Small Group Trials

The researcher asked respondents to answer the items of small-scale feasibility test research instruments on the interactive E-Module of volleyball learning materials. The results of product trials for small groups obtained scores obtained from the response questionnaire of grade VIII students with a total of 15 respondents, namely the average score was at 4.55 and obtained a percentage result of 91%, which means that it is in the category of very feasible to be used as learning material and understanding volleyball material.

2) Large Group Trials

Researchers asked respondents to answer the items of large-scale feasibility test research instruments on the interactive E-Module of volleyball learning materials. The results of product trials for large groups obtained scores obtained from the response questionnaire of grade VIII students with a total of 30 respondents, namely the average score was at 4.45 and obtained a percentage result of 89%, which means that it is in the category of very feasible to be used as learning material and understanding volleyball material.

DISCUSSION

The purpose in this research and development is to produce an Interactive E-Module based on volleyball learning websites that is suitable for use as teaching materials for physical education, sports and health class VIII. "The electronics module or commonly abbreviated as E-Module is one proof of the influence of the development of science and technology in the era of globalization" [12]. This is used by the author in providing solutions to the needs of teaching materials that are more creative, innovative, effective and efficient, of course, in achieving learning objectives. The output of this research and development is the Interactive E-Module based on the PJOK learning website, volleyball game material which refers to grade VIII of Junior High School. This E-Module is in the form of a heyzine flipbook that can be accessed online by anyone who has the E-Module link. In this E-Module, there are several features that are tailored to the needs of students, namely there are learning text materials, audio visuals, images, learning videos, and interactive quizzes. The average result of validator assessment of the Interactive E-Module developed is an average value of 4.43 and a percentage of 89% which is in the very decent category. These results can be concluded that the Interactive E-Module for PJOK learning volleyball material developed can be used with a little revision and tested. The next process after revising according to suggestions and input from validators is to conduct small-scale and large-scale trials. The results of the product trial, the number of scores obtained from the questionnaire of the response of grade VIII junior high school students to the feasibility of interactive E-Modules, namely on a small scale, got an average score of 4.55 and a percentage of 91% was in the category of very feasible for use in the learning process of grade VIII junior high school PJOK. And on a large scale getting an average score of 4.45 and a percentage of 89% is in the category of very feasible to be used in the learning process of PJOK grade VIII SMP. After small-scale and large-scale trials, there are no significant obstacles so that improvements are not made to the product and research can proceed to the next stage.After conducting small-scale and large-scale trials, then conducted feasibility tests on 30 grade VIII students of SMP Negeri Megang Sakti. At this stage, students are asked to respond and fill out a questionnaire that has been prepared to assess the feasibility of the Interactive E-Module product for PJOK learning volleyball material for grade VIII of SMP Negeri Megang Sakti. The results of the product feasibility test, the number of scores obtained from the questionnaire of the response of grade VIII students of SMP Negeri Megang Sakti to the feasibility of the interactive E-Module, namely getting an average score of 4.52 and a percentage of 90% being in the category of very feasible to be used in the learning process of class VIII PJOK SMP Negeri Megang Sakti, Musi Rawas Regency, South Sumatra Province.In a research result in 2022 entitled Development of Application Website-Based E-Modules on Class XI Wave Material, it is stated that the results of research on the development of web-based E-Modules are very feasible to use. Through expert validation, an average score for media experts was obtained of 89.19% with a very good category, while material validation obtained an average score for material experts of 81.27% with a very good category and in the validation of student responses, an average value of 76.53% was obtained with a good category value. So that the results of product validation obtained an average percentage value of 82.45% with a very decent category. Then the web-based E-Module application is very feasible to be used in physics learning. And in another study stated

that the E-Module also received positive comments from students because it was able to present a better display of the E-Module than the module [13]. The existence of this website-based Interactive E-Module can help students in the learning process and can make it easier for students to understand the material both independently and at school because there is an interactive element so that students do not experience boredom in learning, making it easier for teachers to manage lessons as additional administrative media. After conducting a series of research and development of website-based interactive E-Modules on volleyball material, PJOK learning can be disseminated and used in the PJOK learning process, volleyball material for students of SMP Negeri Megang Sakti, Musi Rawas Regency, South Sumatra Province.

IV. CONCLUSION

So that from the results of the study, it can be concluded that the development of E-Interactive Module learning media uses the ADDIE method, which includes 5 steps, namely the Analysis, Design, Development, Implementation, and Evaluation stages as well as product feasibility tests. In addition, the E-Interactive Module learning media product is worth using. The expert assessment of material one received an average score of 4.64 and a percentage of 93%, falling into the very decent category. The expert assessment of material two received an average score of 4.46 and a percentage of 89% was included in the very decent category. And the assessment of media experts gets an average score of 4.20 and a percentage of 84%, falling into the decent category. It can be concluded that the average results from the aspect of material and media validators obtained an average value of 4.43 and a percentage of 89%, which means that it is included in the very decent category. The learning media Interactive E-Module "Very feasible" is used as learning teaching material on volleyball game material, using a feasibility test with an average score of 4.52 and a percentage of 90%.

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REFERENCES

1) Uno, H. B., & amatenggo, N. L. (2022). Education Foundation. Bumi Aksara.
2) Berggren, J., Torpsten, A.-C., & Järkestig Berggren, U. (2021). Education is my passport: Experiences of institutional obstacles among immigrant youth in the Swedish upper secondary educational system. Journal of Youth Studies, 24(3),340–354. https://doi.org/10.1080/13676261. 2020.1728239
3) Wahdaniah, W. (2018). Development of Mathematics Textbooks Based on Collaborative Learning Models Material for Linear and Square Equation Systems Two Variables Class X Ma Madani Alauddin Paopao [Diploma, Universitas Islam Negeri Alauddin Makassar]. http://repositori.uinalauddin.ac.id/1 4049/
4) Kamolidin, P. (2021). Physical Preparation and Development of School Students. Journal of Pedagogical Inventions and Practices, 3, 161–163.
5) Alif, sudirjo. (2019). Philosophy of Physical Education.https://scholar.google.co m/citations?view_op=view_citation&hl=id&user=nHXWEt4AAA AJ&citation_for_view=nHXWEt 4AAAAJ:4MWp96NkSFoC
6) Li, H., Cui, C., & Jiang, S. (2022). Strategy for improving the football teaching quality by AI and metaverse-empowered in mobile internet environment. Wireless Networks. https://doi.org/10.1007/s11276- 022-03000-1
7) Ferrari, A., Cachia, R., & Punie, Y. (2009). Innovation and Creativity in Education and Training in the EU Member States: Fostering Creative Learning and Supporting Innovative Teaching Literature review on Innovation and Creativity in E&T in the EU Member States (ICEAC).
8) Natalia, K., & Sukraini, N. (2021). Approach to the Concept of Free Learning in Digital Age Education. https://www.semanticscholar.org/paper/Pendekatan-Konsep-Merdeka-Belajar-dalam-Pendidikan-Natalia-Sukraini/330585267aa36b56dcb5a d70f60b2a6faee61359
9) Koekoek, J., & Van Hilvoorde, I. (2018). Digital Technology in Physical Education: Global Perspectives (J. Koekoek & I. Van Hilvoorde, Ed.; 1 ed.). Routledge. https://doi.org/10.4324/97802037 04011
10) Zain, S. (2021). 13c—Digital transformation trends in education. Dalam D. Baker & L. Ellis (Ed.), Future Directions in Digital Information (hlm. 223–234). Chandos Publishing. https://doi.org/10.1016/B978-0-12- 822144-0.00036-7
11) Serevina, V. (2018). "Development of E- Module Based on Problem Based Learning (PBL) on Heat and Temperature to Improve Student's Science Proses Skill."http://jurnal.untan.ac.id/index. php/jpdpb/article/view/25475/75676 576633

12) Hutahaean, L. A. (2019). Utilization of Interactive E-Module as a Learning Media in the Digital Age.
13) Septiara, D. P., & Saino, S. (2022). Development of Web-based E-Modules on Creative Products and Entrepreneurship class XI BDP I subjects at SMKN 1 Surabaya. Jurnal Pendidikan Tambusai, 6(2), 10689- 10699