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Development of interactive learning media in learning (PJOK) athletic material for short distance running 100 meters for class X students of SMA Negeri 2 Denpasar

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Abstract

This Research and Development aims to develop interactive learning media in learning (PJOK) material for 100 meter short distance running athletics for class X students which is packaged in the form of a website. This research uses the Research and Development (R&D) method using the ADDIE development model which consists of 5 stages, namely, analysis, design, development, implementation and evaluation. Data collection in this study used a questionnaire on a score scale. Data analysis uses qualitative and quantitative descriptive analysis. Based on the research results, it shows that the learning content expert test obtained a result of 93.3% (very valid), the learning design expert test obtained 100% (very valid), the learning media expert test obtained 98.4% (very valid). Furthermore, product development through individual trials obtained 98.7% (very valid), small group trials obtained 98% (very valid), large group trials obtained 97.9% (very valid). The conclusions obtained from this research and development were stated to be very feasible and usable. Suggestions to educators to implement interactive learning media for 100 meter short distance running packaged in website form on relevant PJOK subjects.

Keywords: interactive learning media, 100 meter short distance running, ADDIE model

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Authors' Contribution: A – Conceptualization; B – Methodology; C – Software; D – Validation; E - Formal analysis; F – Investigation; G – Resources; H - Data Curation; I - Writing - Original Draft; J - Writing - Review & Editing; K – Visualization; L – Supervision; M - Project administration; N - Funding acquisition

INTRODUCTION

In formal education, teachers determine the success of students. The main responsibility of educators is to shape individuals with high morals and not only provide benefits for themselves, but also for their families, communities, and countries. The purpose of education is to change both individual and collective behavior through instruction and training. The learning process involves presenting information to a group of people to achieve certain goals. All components of learning must be involved to achieve these goals. The four components of learning such as learning objectives, learning materials, learning methods and models, and evaluation have an impact on each other. The learning component is a series of interconnected and related processes between components carried out by educators and students to achieve goals (Irsyad et al., 2020:90).

According to Larasati, D., Sumastuti, E., Hadi, D., & Yunus in (Irsyad et al., 2020:90) stated that the use of technology in the education process needs to be maximized. The advancement of information and communication technology over time brings with it new innovations in the field of education. Technological advances in all fields encourage educators to be creative with existing technology, including in the field of sports education which focuses on practice in the field (Karin Preayani et al., 2023:258). In the modern era, technology is undoubtedly a useful tool to solve students' learning problems. The use of proper media can facilitate the learning process, help communicate ideas clearly and concisely, display a picture of events that are as close to reality as possible, foster students' creativity, and so on.

At the time of observation, during the learning process, the delivery of material during the activity when receiving short-distance running lessons for the 100-meter running number was relatively low because there were several obstacles. During the learning of physical education, sports and health, they often practiced in the field because of the limited learning time, which was 2x45 minutes, where the location of the field was outside the school scope so that it took time to travel to the field which made the time provided inefficient, so teachers had to be as good as possible in preparing learning activities. The obstacles faced were the lack of variation in the learning process. The learning model currently used is still conventional and outdated, meaning that teacher activities are carried out repeatedly throughout the learning process without variation and the lack of optimization of existing technology in schools, resulting in boredom in students so that the learning process seemed less interesting and focused. With these conditions, the learning process becomes less motivating, interesting, enjoyable and can be understood by students.

Based on direct information obtained and carried out by researchers, class X students at SMAN 2 Denpasar in sports learning, teachers are required to have an understanding and knowledge related to media and learning models in order to make progress in the learning process (Liberta, et al., 2020:12). Based on previous research conducted by (Fernando et al., 2022) entitled "Android-Based Interactive Volleyball Learning Media", this shows that media products increase students' interest and motivation to learn. Research by (Khaidir et al., 2021) entitled "Development of Interactive Learning Media for Athletics Material in Physical Education, Sports and Health Subjects", the results of this study indicate that students can learn effectively and efficiently if they are motivated to participate in the learning process and have access to interactive learning materials about athletics.

Looking at the researcher's observations with the problems that have been described above during short-distance running athletics learning, the researcher is interested in conducting research that focuses on "Development of Interactive Learning Media in Learning Physical Education, Sports and Health for 100 Meter Short-Distance Running Athletics Material

METHOD

Learning is a process of interaction between teachers and students in a directed and educational manner to produce the best results in accordance with the goals that have been set (Semarayasa & Preayani, 2023:201) Therefore, physical education, sports and health is one component of the entire education system, its role is very important in preparing students for a healthy and active life (Fakhrur, et al., 2022:145). Regular, planned, and guided physical education teaching is expected to change students' behavior and help them achieve goals such as coaching and training for their physical development (Prasetyo et al., 2021:302). According to (Putra & Damanik, 2021:60.)physical education for sports and health is a teaching method that involves physical exercise that is thought out systematically. Based on the above views, the goals of physical education and physical education, sports and health are to shape character, develop motor skills, foster critical thinking skills, develop sportsmanship, and improve healthy lifestyles through a systematic learning approach and develop aspects of physical fitness through movement.

One of the oldest sports, athletics is called the "Mother of all Sports". According to (Yudi et al., 2019:63) Athletics is a branch of physical sports that is competitive and consists of various categories of competitions based on basic human movement abilities. Meanwhile, according to (Sutriawan, 2023:3) all sports are rooted in athletics, which includes activities such as running, throwing, jumping, and walking. From the definition given above, athletics is one of the original sports and the forerunner of all sports and this sport also involves physical activity for all movements and involves the movement of all parts of the body, including the arms, legs, and other parts.

According to (Indarto et al., 2018) in the journal (Laksana et al., 2021)The physical education and health education curriculum set by the government continues to be the foundation for athletic education in schools. Anyone who pursues athletics, especially in the short-distance running (sprint) branch, must be able to understand and master short-distance running. The 100-meter, 200-meter, 400-meter runs are included in the short-distance running category. Efforts to achieve optimal performance, an athlete, in addition to having strength,

speed, flexibility, endurance, and good relationships, must also understand and master the movement techniques (Lanang, 2010:18).

Learning media by utilizing learning technology such as interactive media and audio-visual media can be used to improve learning outcomes and increase students' interest in learning so as to provide students with a better understanding of the 100-meter short-distance running movement(Dwi Cahyo et al., 2023:27). According to Gerlach and Ely In a broad sense, media refers to individuals, objects, or events that provide the conditions necessary for students to learn new information, skills, or world views. Another limitation is also put forward by the Association for Education and Communication Technology (AECT) defining media as any form used for a process of delivering or distributing information (Arsyad, 2015).

According to Kustandi & Sutjipto, as quoted by (Rahmi et al., 2019) explains that learning media is a tool that can support the teaching and learning process and help clarify messages so that learning objectives can be achieved more effectively. Digital media such as electronic text, graphics, moving images, and sound that are combined with each other to support teacher-student interactions are known as interactive learning media (Purnama & Pramudiani, 2021:2441). Interactive learning media has significant potential to encourage students to react positively to the lessons taught (Gulo & Harefa, 2022). Based on the description above, learning media is a tool that can help the learning process which functions to clarify the meaning of the message that the educator wants to convey so that learning objectives are achieved better and more perfectly.

According to (Pranopik, 2017) development research is research that aims to create a new product or develop an existing product to be even broader with the keyword that the product is tested for its effectiveness. To create a product or result that is adequate or suitable for use, development aims to produce a product based on findings from a series of trials, such as those conducted by individuals, small groups, medium groups, and field tests. These trials are then revised, and so on.

The development model used in this study is the ADDIE Model, which is one of the systematic learning design models. Based on a structured model and developed according to the needs and characteristics of learning, this development model was chosen. According to Tegeh, I Made, et al. (2014:42.) explains how this model is structured using a program structure and a series of methodological activities to overcome learning challenges related to educational materials that are in accordance with student characteristics. Research findings show that the research and development model textbook is made using the ADDIE model which includes five steps; (1) analysis, (2) design, (3) development, (4) implementation, and (5) evaluation

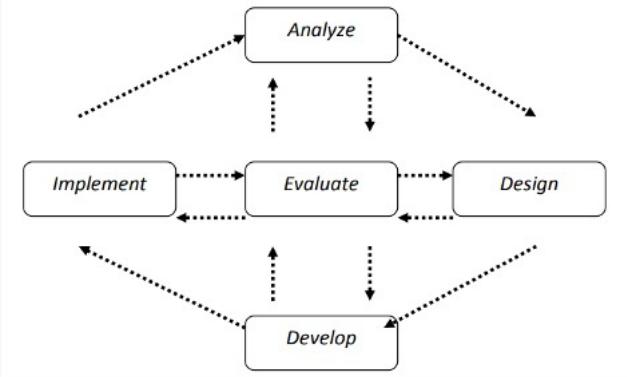

Figure 1. ADDIE Model Stages

In the analysis phase, At this stage, an analysis of the school's needs and environment as well as a material analysis is carried out. During the design stage, the focus is on selecting software to create the design and development of the product or media in a storyboard. During the design stage, the focus is on choosing software to create designs and product development or media in the storyboard. because this interactive learning media is made in the form of a web, several software such as canva, capcut and google sites are used. At the development stage, the product that has been designed and drafted is developed and expert testing is carried out. The expert test was carried out by 3 experts, namely learning material experts, learning design experts and learning media experts. The implementation stage is carried out after completing the trial with experts. At this implementation stage, the aim is to find out the responses and responses from users regarding the product being developed.

The research subjects in this study include content experts, instructional design experts, educational media experts, field practitioners, individual trial participants, small-group trial participants, and large-group trial participants. The media products that were initially created were assessed by learning material experts who had a background in athletics, learning design experts with a background in informatics engineering, and educational media experts with a background in learning technology. The responses and suggestions from these experts were used to improve the products or media that were developed.After making improvements based on input from experts, the product was tested on students. Individual trials involving 4 people, small group trials involving 8 people, and large group trials involving 30 people from class X1 and X2 of SMA Negeri 2 Denpasar.

The data collection method used in this study is a questionnaire. A questionnaire containing responses or statements is used as a data collection tool in this study to collect information from reviews conducted by learning content experts, learning media experts, and learning design experts as well as information from individual, small, and large group trial reviews.

The data analysis techniques used in this study include both qualitative and quantitative descriptive analysis. Qualitative descriptive analysis is used in dissecting information as notes or, ideas or comments on the consequences of the evaluation of the questionnaire sheet or questionnaire depending on the test subjects, observation sheets from observers, validation sheets and reviews from experts. While quantitative descriptive analysis is used to process data obtained through questionnaires in the form of descriptive percentages

To be able to provide meaning and make decisions using the following provisions:
Table 1. Conversion of Achievement Level Scale 5

No	Tingkat Pencapaian	Kualifikasi	Keterangan
1	90 – 100%	Very Good	No Need to Revise
2	80 – 89 %	Good	Revised as necessary
3	65 – 79%	Enough	Quite a Lot In Revision
4	55 – 64%	Not Enough	Many Revisions
5	0 – 54%	very Less	Total Revision

RESULT

The results of the research on the development of interactive learning media in learning on 100-meter short-distance athletics material for class X students of SMA Negeri 2 Denpasar refer to the results of the feasibility test of the developed product. The results of the feasibility test obtained from the results of the review and assessment of each research subject, namely 1) the results of the assessment of the learning content expert test, 2) the results of the assessment of the learning design expert test, 3) the results of the assessment of the learning media expert test, 4) the results of the assessment of the individual test, 5) the results of the assessment of the small group test, and 6) the results of the assessment of the large group test. The following are the results of the assessment of each subject which are presented in detail.

Table 2. Feasibility Test Results

No	Research Subject	Eligibility Result (%)	Information
1	Learning Content Expert	93,3%	Very good
2	Learning Design Expert	100%	Very good
3	Learning Media Expert	98,4%	Very good
4	Individual Trial	98,7%	Very good
5	Small Group Trial	98%	Very good
6	Large Group Trial	97,9%	Very good

DISCUSSION

This study focuses on the development of products in the form of interactive learning media in learning short-distance athletics material for 100-meter running for class X students of SMA Negeri 2 Denpasar which is packaged in the form of a website. After developing the product, the next step is to ensure that the product is feasible to implement or not by going through the instrument testing and expert testing process. To determine the quality of the product made, it was tested by 3 experts, namely, content/learning material experts, learning design experts, learning media experts, while the next stage was through the individual testing process, small group testing, and large group testing.

The design and development of this website-based interactive multimedia was carried out using the ADDIE development model which produces a storyboard, while part of the trial subjects adopts the Dick and Carley model. The ADDIE model includes five steps; (1) analysis, (2) design, (3) development, (4) implementation, and (5) evaluation. The stages of the teaching material trials that have been carried out are the trial of learning content experts, trial of learning design experts, trial of learning media experts, individual trials, small group trials and large group trials. All of these stages are carried out to perfect interactive multimedia based on educational games so that they are truly capable and worthy of being used in PJOK learning.
Based on the results of the study, it shows that in the expert test, the learning content obtained a very good qualification with a percentage of 93.3%. This is also in line with research conducted by (Khaidir et al., 2021:6) where at the content expert test stage, the results were very decent because the material presented was complete and the form of material explanation was clear. For the learning design test, it obtained a very good qualification with a percentage of 100%, while for the learning media expert test, it obtained a very good qualification with a percentage of 98.4%. This is also in accordance with research conducted by(Suwiwa et al.,

2022:139) the development of learning media with the ADDIE model obtained very good results from design experts and learning media experts so that it is very suitable for use by students. Continued with the implementation stage, at the individual trial stage, they get very good qualifications with a percentage of 98.7%. For small group trials, they get very good qualifications with a percentage of 98%. While for large group trials, they get very good qualifications with a percentage of 97.9%.

Evaluation stage, at the evaluation stage to find out to what extent the product made can achieve the goals and targets that have been set previously. The evaluation stage of the feasibility of the product developed is ended with a revision based on the expert test of learning content, expert test of learning design, expert test of learning media, individual test, small group test, and large group test stating that the development of interactive learning media products in learning athletic material for 100-meter short-distance running for class X students of SMA Negeri 2 Denpasar is included in the category of very feasible to use and can be implemented in the actual learning process.

This product is an interactive learning media based on the Website in the subject of physical education, sports and health. Because it is packaged as website-based software and can be used on any computer, interactive learning media based on the website is more time-efficient than other similar sources. Users can learn without being limited by space and time. However, there are several limitations to this interactive learning media, because it is made in the form of a website, so the signal to access this media greatly affects the process of using it.

CONCLUSIONS

Design and construction of interactive learning media in learning (PJOK) on 100 meter short distance athletics material for class X students at SMAN 2 Denpasar which was developed using the ADDIE development model (analysis, design, development, implementation, evaluation) so that it produces a storyboard as a basic framework for creating interactive learning media in learning (PJOK) on 100 meter short distance athletics material for class X students at SMAN 2 Denpasar which is packaged in the form of a website, where this media consists of, (1) cover, (2) menu, (3) learning objectives, (4) material, (5) video, (6) evaluation, (7) developer profile.

Based on the results of expert validation obtained through questionnaires to research subjects, the results obtained (1) the expert test of learning content obtained very good qualifications with a percentage of 93.3% so that it is very suitable for use in the learning process of physical education, sports and health, athletic material, short distance running 100

meters. (2) For the learning design test, it obtained very good qualifications with a percentage of 100% so that it is very suitable for use in the learning process of physical education, sports and health, athletic material, short distance running 100 meters. (3) Meanwhile, for the expert test of learning media, it obtained very good qualifications with a percentage of 98.4% so that it is very suitable for use in the learning process of physical education, sports and health, athletic material, short distance running 100 meters.

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