

# Development of Teaching Materials Short-Distance Running Athletics Based on Interactive Multimedia For Class VIII Junior High School Students

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**Abstract:** The development research carried out has a purpose of developing teaching materials based on interactive multimedia on physical education subjects for learning short distance running athletics. This study aims to determine the feasibility of these teaching materials as learning media, especially during the Covid-19 period. The method used in this research is a preliminary study survey with a descriptive approach to find out the initial data which is the process of developing teaching material products based on interactive multimedia and the instrument used is a questionnaire. The schools that were used as research samples were two Junior High School in Sukoharjo Regency with the subjects of this study 191 students. Based on a preliminary study survey with a questionnaire instrument for students in each school, who understand sprinting technique is 63.9% and 36.1% have not been able to fully understand. From the findings of the preliminary study survey with the questionnaire instrument in the two schools above, it shows that teachers and students from Junior High School in Sukoharjo Regency have a fairly good perception. Teaching materials based on interactive multimedia is learning that contain material, evaluation questions, videos, tutorials, and simulations. Interactive multimedia criteria include attractive and interactive design, usable, accessible, appropriate, relevant. Development of teaching materials based on interactive multimedia for learning short-distance running athletic as an alternative to learning during the Covid-19 pandemic that is suitable for use in teaching and learning activities.

**Keywords:** Teaching materials, interactive multimedia, short-distance running athletic

## 1. Introduction

Education is a process in order to influence students to adapt the environment as best as they can and will thus produce changes in themselves that enable them to function powerfully in people's lives. A school of formal education institutions is a good place to internalize tolerance through a series of processes in intracurricular and extracurricular activities [1]. Learning is a process by which an individual assumes a whole new change of conduct, resulting from their own experience in an intrusion with their ward [2].

Therefore, the conscious activity of a person that produces changes in behavior in himself, both in new knowledge and skill and in a positive attitude and value form [3]. In the learning process, a person gains new experiences in the form of skills and knowledge.

Learning is a system, composed of components that connect to one another. The components include: goals, materials, methods and evaluations [4].

That is why the teacher or educator should serve as a facilitator and motivator to the learning process among learners, help and provide convenience so that students get a learning experience that suits their needs and abilities so that there is an active interaction [5].

The learning model is a plan that is used to design teaching, the contents in the learning model are in the form of teaching strategies used to achieve instructional goals [6].

Learning is a form of activity that has planning and accomplishing it involves educators and learners who connect the steps of one learning activity with the other learning activities to achieve competence in a particular field of study. One of them is the teaching model which means teaching material is all forms of material used to assist a teacher or instructor in carrying out the teaching activities in the classroom. Teaching materials allow students to learn a competency or basic competence in a coherent and systematic way so that they are cumulatively able to master all competencies in a complete and integrated manner, so that teaching materials have an important role in learning [7].

Interactive multimedia is a tool or learning facilities that contain materials, methods, limitations, and ways of evaluating that are designed systematically and attractively to achieve the expected competencies or sub-competencies of subjects according to their level of complexity [8].

Physical and health education subjects are required subjects for students in addition to other subjects. The characteristics of physical education, sports and health when compared to other subjects are this lesson emphasizes physical activity and healthy living habits which have an important role in the development and coaching of students. Physical education learning sports and health requires physical elements such as strength, speed, agility, explosive power, endurance, and coordination. One important element that is useful in mastering sports skills is eye, hand and foot coordination. The purpose of physical education is the development of the whole human society of Indonesia. What is meant by Indonesian people as a whole is a man who believes and fears God Almighty and virtuous, have knowledge and skills, physical and spiritual health, a strong and independent personality and a sense of social and national responsibility [9].

In these subjects students will learn about skills and learning on running materials which are composed of cognitive, affective, and psychomotor aspects. In the area of physical skills which are required to perform or carry out practice, so that in learning in this field of science requires the right media to facilitate or assist students in achieving good learning outcomes in running athletic learning materials [10]. Physical education lessons are essentially a process of education that utilizes physical and health activity to produce holistic and individual qualities, both physically, mentally, and emotionally. Physical education requires a child as a whole, a total being, rather than just think of him as a separate physical and mental quality [11].

The essence of physical education subjects includes running problems. Running is a jump in a row, in which the two feet do not spill on the ground [12]. In the matter of

running, it refers to one of the physical education teaching materials. Running is the frequency of steps that are accelerated so that when running there is a tendency for the body to float, which means that when running, both feet do not touch the ground, at least one foot remains touching the ground. Therefore, there are several parts of learning that need to be further elaborated on the basic motion elements of running, leg swing, arm swing, coordination of leg swing and arm swing [13]. A short distance is ability to move a body position from place to place quickly exceeds the basic motion on leisurely running (jogging) skills [14].

In the study of the problem of sprinting away from basic movements, it is necessary to discuss what is a basic running motion and with the correct sequence of steps. The basic motion is a general motion, once dominated by elementary school students, a solid basis for developing more complex gestures [15].

Indicator of short-distance running techniques in both junior high school and senior high school neighborhoods according to department, in the short-distance running technique development guidelines, are as follows: 1) start techniques, start techniques divided into three kinds of the first short starting, the second medium starting, the third long starting, 2) technique of cues requires a concentration that needs to be sustained for a moment, after the sound of the pistol is heard running very fast with pressing the feet of the starting beam, 3) footstep techniques, 4) this technique over the finish line, which is often done by throwing your chest forward when several runners are crossing the finish line at the same time, the runner having his limbs touch the ribbon first wins [16].

The main purpose of this learning is not to improve student achievement. But more emphasis in an effort to enrich the basic movements of running. Thus, it is hoped that they will be more skilled, effective and efficient in using or functioning their limbs [17]. There is learning innovation embodied in teaching materials interactive multimedia based expected to create interesting learning process innovations that are applied in classroom learning. As for the use of teaching materials interactive multimedia based through the website so that students can access teaching materials interactive multimedia based Physical education everywhere at the same time introduces new technological developments.

The covid-19 pandemic has affected the learning process so much that learning is carried out online. The COVID-19 pandemic has greatly affected the learning process so that learning is carried out online. This causes educators to be creative in preparing the learning media used. Therefore, it is necessary to do research to find out whether the development of teaching materials interactive multimedia based for this physical education subject, it is appropriate for students to use it in the midst of the COVID-19 pandemic.

## **2. Method**

This research is an development study or Research and Development (R&D) by using the method of model development ADDIE Analysis, Design, Development, Implementation and Evaluation.

The type of research conducted is preliminary survey research with quantitative research methods using a descriptive approach to determine the initial data, namely the process of developing teaching material products interactive multimedia based and the instrument used is a questionnaire. The schools that were used as research samples were two junior high schools in Sukoharjo Regency with the subjects of this study being students of grade VIII. The research instrument used was a direct data collection system using a questionnaire distributed to all students.

The data processing technique uses 3 steps namely Observation Method, Questionnaire Method, Test Method. The questionnaire contains the basic movement learning material for short distance running which is divided into 6 questions. The sampling technique used with the student population in two schools of grade VIII junior high schools in Sukoharjo Regency was 605 students. So that a sample of 191 students was taken with an error rate of 1%.

The analytical data used are research conducted to determine whether the development of teaching materials interactive multimedia based physical education is appropriate to be used as a learning medium to improve student learning due to the covid-19 pandemic.

### **3. Results and Discussion**

As research procedures have been demonstrated in research methods, research this development consists of 5 (five) major steps, which are: analysis, product design, product development, implant product and product evaluation. The development of multimedia based teaching materials interactive short-distance athletic competency begins with an analysis. The results derived from the design stage are: the materials on multimedia interactive teaching materials in this study are found in basic short-range athletic competency. Flowchart is a furrow diagram in the creation of these multimedia interactive learning. In turn, storyboards to be used to describe the shape of each display within each frame in the multimedia developed.

The development of multimedia teaching materials, interactive learning materials, basically deals with short-range athletic runoff materials. This media production is also based on prototype designs, flowchart, and storyboards drawn up along with other by-products that support it. The target user of this multimedia interactive resource product is two eighth junior high school students in sukoharjo district. The multimedia, interactive based teaching products that are deemed worthy will then be implemented or tested with a mixture of second-year eighth junior high school students in sukoharjo district.

The product is declared worthy then implemented and judged by students in the form of tests. The trial of interactive multimedia based teaching materials at each stage will be judged by students and revised according to the flaws in the multimedia. According to a preliminary study survey with an angket instrument for students at each school the value results obtained from teachers on the fast run techniques are 63.9% and 36.1%.

**Table 1.** The teacher observation data results

Category	Amount	%
Highest Score	122	63,9%
Lowest Value	69	36,1%

It is known that based on the questionnaires that have been distributed to students, this research was conducted by giving 6 questions to all class VIII students at two schools in Sukoharjo Regency, the first question related to the attractiveness of students doing the basic short-start attitude technique in short-distance running athletics.

**Table 2.** Answers Attractiveness of students doing the basic techniques of short start attitude

Students Answer	Amount	%
Strongly Agree	98	51,3%
Agree	69	36,1%
Disagree	18	9,4%
Strongly Disagree	6	3,1%

This is reinforced by the number of students who strongly agree to do a short start is 98 students or 51.3% and students who agree are 69 students or 36.1%, and the remaining 12.6% disagree or even disagree with it.

Analysis from here mention that there are still students who are not interested in the short start technique, so they need media teaching materials interactive multimedia based to understand and understand.

The second question is related to the attractiveness of students doing the basic techniques of middle-start attitude in short-distance running athletics.

**Table 3.** Answers Attractiveness of students doing the basic techniques of middle start attitude

Students Answer	Amount	%
Strongly Agree	114	59,7%
Agree	65	34%
Disagree	10	5,2%
Strongly Disagree	2	1,05%

Based on the table, as many as 114 students or 59.7% of students strongly agree with the medium start technique, but there are still some students who do not agree. In addition, the statements of students who agreed were 65 students or 34% and 12 students disagreed or 6.3% with the medium start technique.

For the third question is related to the attractiveness of students in performing the basic long-start attitude technique in short-distance running athletics.

**Table 4.** Answers Attractiveness of students doing the basic technique of long start attitude

Students Answer	Amount	%
Strongly Agree	64	33,5%
Agree	91	47,6%
Disagree	24	12,6%
Strongly Disagree	12	6,3%

Based on the data above as many as 64 students or 33.5% strongly agree and 91 students or 47.6% agree and the remaining 18.8% or 36 students do not agree to do the basic long start technique.

The fourth question is related to the attractiveness of being ready on cue, when there is a sequence of being ready, ready, yes.

**Table 5.** Answers Attractiveness of students doing basic cues

Students Answer	Amount	%
Strongly Agree	106	55,5%
Agree	66	34,5%
Disagree	11	5,7%
Strongly Disagree	8	4,2%

Based on the table, as many as 106 students or 55.5% stated that they felt strongly agree, and 66 students or 34.5% agreed, for the rest who disagreed as many as 19 students or 9.9%, due to lack of concentration when doing cues.

The fifth question is related to the attractiveness of the basic techniques of support and kite stance in short-distance running athletics as follows.

**Table 6.** Answers Attractiveness of students doing the basic techniques of support and kite stance

Students Answer	Amount	%
Strongly Agree	127	66,5%
Agree	56	29,3%
Disagree	5	2,6%
Strongly Disagree	3	1,6%

A total of 127 students or 66.5% strongly agree and 56 students or 29.3% agree, and students who do not agree as many as 8 students or 4.2%.

This proves that students are more interested in the basic techniques of hovering and support when doing short distance running.

The sixth question is related to the attractiveness of the basic technique of running attitude to enter the finish line.

**Table 7.** Answers Attractiveness of students doing the basic techniques of attitude to enter the finish line

Students Answer	Amount	%
Strongly Agree	132	69,1%
Agree	54	28,3%
Disagree	3	1,6%
Strongly Disagree	2	1,05%

A total of 132 students or 69.1% strongly agree and 54 students or 28.3% agree with doing the basic techniques of attitude to enter the finish line.

#### 4. Conclusion

Technological developments have an effect on education. Media is important for learning, with developing technology, media is also experiencing development.

The resulting product is in the form of teaching materials interactive multimedia based. Based on the discussion and findings above regarding the basic movements of short-distance running for class VIII students at two junior high schools Sukoharjo Regency, it can be concluded quite well. Based on a preliminary study survey with a questionnaire instrument for students in each school the results obtained from the teacher on the sprint technique were 63.9% and 36.1%.

Meanwhile, based on the questionnaire distributed to students, as many as 191 students for the short start basic technique attractiveness questionnaire were 51.3%, and 59.7% for the medium start basic technique attractiveness, and 33.5% the long start basic technique attractiveness, and 55.5% attractiveness of basic techniques of cue stance, and 66.5% attractiveness of basic techniques of support and gliding, and 69.1% attractiveness of basic techniques crossing the finish line. From the findings above it can be said that the basic technique of sprinting for class VIII students at two schools of junior high school in Sukoharjo is quite good, need teaching materials interactive multimedia based for improvement and can be used as a reference for further research.

Suggestions that can be put forward in teaching materials this interactive based is effectively used in the learning process, therefore teachers can create learning materials that use technology to achieve learning objectives. In the midst of a pandemic like this, learning media that is flexible, interesting and interactive, usable, accessible, appropriate, relevant is very much needed.

Development of teaching materials interactive multimedia based short-distance running athletic learning as an alternative to learning during the Covid-19 pandemic which is suitable for use in teaching and learning activities.

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