



Interactive Multimedia Innovation on Short Distance Running Materials in Junior High School

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ABSTRAK

Inovasi dalam bidang pendidikan harus sesuai dengan perkembangan dan tuntutan. Langkah awal peningkatan mutu pendidikan adalah melalui inovasi proses pembelajaran, dengan mengintegrasikan pemanfaatan media pembelajaran berbasis TIK ke dalam sistem pembelajaran. Oleh karena itu, penelitian ini bertujuan untuk menggali perlunya pengembangan media pembelajaran berbasis TIK untuk materi lari jarak pendek di SMP. Penelitian ini menggunakan deskriptif kualitatif. Sampel penelitian terdiri dari 83 siswa kelas VIII dan 2 guru mata pelajaran. Teknik pengumpulan data menggunakan studi lapangan, wawancara, dan angket analisis kebutuhan, sedangkan instrumen menggunakan lembar observasi, angket, dan daftar pertanyaan. Hasil penelitian akan dianalisis secara interaktif melalui pengumpulan data, reduksi data, penyajian data, dan penarikan kesimpulan. Hasil penelitian menunjukkan bahwa selama pelaksanaan pembelajaran, guru cenderung tidak menggunakan media pembelajaran. Modul cetak masih mendominasi penggunaannya dalam pembelajaran (43,4%). Inovasi terkait multimedia interaktif muncul ketika peserta merasa tertarik dengan media pembelajaran yang kompleks dan fleksibel dalam pengoperasiannya. Hasil angket menunjukkan bahwa 80,7% siswa tertarik dengan kehadiran multimedia interaktif dalam pembelajaran jasmani dan olahraga, dan tentunya ini merupakan langkah awal untuk melaksanakan kegiatan pembelajaran yang inovatif. Sehingga hasil penelitian ini menunjukkan bahwa dibutuhkan sebuah inovasi melalui pengembangan media pembelajaran digital, sebagai sarana untuk meningkatkan kualitas proses dan hasil pembelajaran.

ABSTRACT

Innovation in the field of education must be in accordance with the developments and demands. The first step in improving the quality of education is through innovation in the learning process, by integrating the use of ICT-based learning media into the learning system. Therefore, this study aims to explore the need for the development of ICT-based learning media for short-distance running materials in junior high schools. This study applies a descriptive qualitative. The research sample consisted of 83 class VIII students and 2 subject teachers. Data collection techniques used field studies, interviews, and needs analysis questionnaires, while the instruments used observation sheets, questionnaire, and a list of questions. The research results will be analyzed interactively through data collection, data reduction, data presentation, and drawing conclusions. The results of the study indicate that during the implementation of learning, teachers tend not to use learning media. Print modules still dominate their use in learning (43.4%). Innovations related to interactive multimedia appear when participants feel attracted to a learning media that is complex and flexible in its operation. The results of the questionnaire showed that 80.7% of students were interested in the presence of interactive multimedia in physical learning and sports, and of course this was the first step to implementing an innovative learning activity. So the results of this study indicate that an innovation is needed through the development of digital learning media, as a means to improve the quality of the process and learning outcomes.

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1. INTRODUCTION

The teaching and learning process as one of the descriptions of the interaction of the students and educators certainly has a purpose (Chetty et al., 2019; Narmaditya et al., 2021). Teachers or educators play more of a role as facilitators and motivators for the learning process among students, forming and providing convenience so that students get a learning experience that suits their needs and abilities so that there is an active interaction (Häkkinen et al., 2017; Serin, 2018). Learning that has good appeal has one or more of the qualities, and contains elements of challenge, elements of high expectations, elements of relevance and authenticity in terms of students' past experiences and future needs, aspects of humor or fun elements, elements of attention through things. something that is new, is able to involve intellectually and emotionally, can relate to the interests and goals of students, and is able to use various forms of representation (Lu et al., 2019; Puspitasari & Nurhayati, 2019). Physical education is education through physical activity. By participating in physical activity,

students can master skills and knowledge, develop aesthetic appreciation, develop generic skills and positive values and attitudes, and improve physical condition to achieve physical education goals (Mustafa & Dwiyoogo, 2020; Putra et al., 2020). Indeed, basically the physical program has relatively the same importance as other educational programs in terms of the realm of learning, namely developing three main areas; psychomotor, affective, and cognitive (Hayati & Halim, 2021; Krathwohl, 2002). However, there is one peculiarity and uniqueness of the physical education program that is not owned by educational programs, namely in terms of developing psychomotor aspects, which are usually associated with the goal of developing children's physical fitness and achieving movement skills. On the other hand, Physical Education, Sports and Health (Penjasorkes) is a subject that must be followed by students in addition to other subjects (Mustafa & Dwiyoogo, 2020; Wang & Yin, 2021). The characteristics of physical education, sports and health, when compared to other subjects, are prioritizing physical activity and healthy living habits which have an important role in the development and development 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. This eye, hand, and foot coordination skill is one of psychomotor intelligence, where this psychomotor intelligence is one of the three main intelligences that humans must possess in addition to cognitive intelligence and affective intelligence (Aenon et al., 2020; Mustafa & Sugiharto, 2020). In this subject, students will learn about skills and knowledge in running material which consists of cognitive, affective, and psychomotor aspects (Budiman & Suharto, 2021; Putra et al., 2020). In the field of physical skills which are needed to carry out or carry out practice, so that 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 (Aenon et al., 2020). Athletics lessons are one of the Physical Education subjects that must be given to students from the elementary school level to the senior high school level (Mustafa & Dwiyoogo, 2020; Suriatno & Yusuf, 2020). Even in some colleges, athletics is offered as one of the General Basic Courses. Athletics is the mother of most sports, where the movements in athletics such as walking, running, jumping and throwing are owned by most sports. With the obligation to provide athletic sports in schools in the subjects of Physical Education (Putra et al., 2020; Utami & Purnomo, 2019).

In accordance with the core competencies and basic competencies contained in the Junior High School (SMP) curriculum that in learning there is running athletic material, the core competencies and basic competencies in running athletics lessons are applying one of the skills of athletic activity to produce effective motion, practicing one of the an athletic activity skill to produce effective motion (Budiman & Suharto, 2021; Mustafa & Dwiyoogo, 2020). Meanwhile, it turns out that the short distance running athletic learning is still experiencing some obstacles in its implementation at school. There are several reasons why learning short distance athletics has not been implemented properly, namely, theories, principles, and generalizations regarding learning short distance running athletics have not been widely disclosed, understanding of what and how short distance athletic techniques are still minimal, textbooks and handbooks teachers still dominate as learning media, and teaching materials for short-distance athletics are still less innovative and not based on digital technology (Kurniawan & Hariyoko, 2020; Shigang & Sheng, 2021). As the results of observations made around September 2020, in learning short-distance running athletics in class VIII of Kartasura 2 Public Junior High School. Learning short-distance running athletics is still experiencing several obstacles, namely; students' learning motivation is still low. Factors that influence students' low learning motivation are the presentation of material and learning that is still centered on the teacher, causing unidirectional learning and making students less able to explore themselves, the teacher has not been able to manage learning well. In learning short distance running athletics, teachers still use material that is delivered by reading to students without any learning media that students can use to help understanding, the teaching materials used in schools are inadequate. The existing material also does not present a content that attracts students to participate actively in learning. To overcome this obstacle, one of them can be done by developing teaching materials in the form of media that are in accordance with the characteristics of junior high school students so that students have a high interest in learning short distance running athletics and easily understand the learning, and only 68 people (41.98%) of 162 students who achieved complete learning and for those who had not exceeded the graduation criteria, 94 students (58.02%) (value 75). In junior high school sprint athletics learning, the learning material is verbalistic so it tends to be delivered using the lecture method, storytelling, or by not using media and demonstrations so that these skills are considered difficult and boring by students. Difficulties with abstract and verbalistic learning materials can be overcome, one of which is through learning media that is applied to Gadgets and Desktops whose material is related to real conditions in students' daily lives. Through learning media, teachers will have no difficulty in repeating or giving examples of the material presented and students will be more interested and not bored in participating in learning (Olugbenga, 2019; Tafonao, 2018). Running athletic subjects are also one of the subjects that often use learning media in every learning process (Chen, 2012; Y. Li & Lu, 2020). Using learning media can help teachers to deliver material and make it easier for students to better understand the material presented by the teacher.

Some of the studies and field facts above are based on the need to improve learning models, media, and learning tools that use ICT to improve student achievement. One of the media that can be used in classroom learning is a computer because most of the students in junior high school are familiar with technology, the use of computers (Budiarto et al., 2020; Nicolaou et al., 2019) (Nicolaou et al., 2019; Budiarto et al., 2021). The implementation of learning that can utilize or be integrated with computers will increase student interest in learning and academic achievement (Junaidi, 2019; Kumar & Hema, 2017). This allows the realization of an innovation in the implementation of distance running athletic learning based on ICT-based learning media which can also be applied or run on smartphones (Akkaya, 2021; Saġin, 2021). This learning media will be a means or learning aid that is more effective in delivering material and efficient in the use of time and energy (Lim et al., 2020; Roemintoyo et al., 2022). Several reasons for using electronic media can increase the effectiveness of the learning process, namely allowing direct interaction between students and subject matter, the learning process can take place individually according to the learning abilities of students, being able to display audio-visual elements to increase interest in learning, and being able to create a learning process. continuously (Y. Han, 2015; Hapsari et al., 2019). Through media that is integrated with ICT, students will have the freedom to use media to learn and develop their own abilities independently (Eladl & Musawi, 2020). Apart from that, it cannot be denied that learning media is very important in the teaching and learning process. Media is a tool whose function is to transfer knowledge to students (Rajagukguk & Simanjuntak, 2015; Siregar & Marpaung, 2020). Media is everything that is used to channel a message to the recipient, the aim of which is to be able to stimulate the thoughts, feelings, concerns, and interests and concerns of students so that the teaching and learning process occurs (Budiarto et al., 2020; Sudjana & Rivai, 2011). The presence of this media is very helpful for teachers in teaching and makes it easier for students to receive and understand lessons (Abdillah et al., 2018; Hendi et al., 2020). The use of instructional media in the teaching and learning process can also generate new desires and interests for students, generate motivation to learn, and even have a psychological effect on students. Besides being able to increase students' learning motivation, the use or utilization of media can also increase students' understanding of the lesson (Maharani et al., 2018; Sanaky, 2013). Instructional media used in a position as a teacher's tool in teaching. Its purpose is to capture, process, and rearrange visual and verbal information, as a teaching aid, the media is expected to provide concrete experiences, learning motivation, enhancing student learning absorption and retention (Anitah, 2012). The use of electronic media in the teaching and learning process aims to improve the quality of teaching and learning. Teachers need to have the skills and confidence to use computer technology and gadgets and create an interactive teaching and learning atmosphere (S. Z. Dewi & Hilman, 2019; Fakhurrhazi, 2018). In addition, using ICT-based learning media, such as multimedia, can make it easier for students to understand something abstract and clarify the presentation of information or educational materials (R. K. Dewi et al., 2019) and improve learning processes and outcomes (Misir, 2018; Sutrisno & Siswanto, 2016). The use of learning media should be a concern for teachers in every teaching and learning process. Keep in mind that the use of learning media can improve the quality of teaching and learning activities, increase interest in learning, and digitize the delivery of educational materials (Budiastuti et al., 2018; Henrie et al., 2015; Sudjana & Rivai, 2011). Using technology in education, especially computer-based learning, can help students achieve learning goals and improve learning outcomes (Nurjanah & Dahlan, 2018; Pilegard & Mayer, 2016). In addition, it can also help students improve understanding, provide interesting data, and facilitate information retrieval (Fitria et al., 2017; Lim et al., 2020). Based on the description, the integration of ICT in distance running athletic learning is a must. There needs to be a learning reform from conventional to constructivist learning by utilizing technology as widely as possible to facilitate student learning while making it easier for students to learn. Effective integration of technology in learning allows teachers and students to access concepts more easily, and can represent abstract concepts. One of the characteristics of an innovative teacher is being able to develop learning. Through the results of this paper, it is hoped that it can become the basis for educators to solve learning problems so that learning activities become more effective, efficient, and achieve the expected competencies. Therefore, the results of achieving basic competencies are low, the media used in learning as learning resources are less varied, there are significant results from several studies on integrating ICT in learning, as well as efforts to optimize existing potential (resources), then the development of learning media that is integrated with ICT in short-distance running athletic learning is very important to be followed up. This study aims to explore the types and potentials for developing ICT-based learning media that can be used as a choice of learning media innovations in the classroom, as a basis and needs analysis activity to develop a digital-based learning media innovation.

2. METHOD

This study uses a qualitative approach (Sugiyono, 2014), considering that this research is a form of needs analysis, the qualitative approach is considered appropriate for conducting a comprehensive exploration and identification of needs. The population of this research is the students of SMP Negeri 2 Kertapura, with the

research sample being class VIII students totaling 83 samples, and 2 teachers of physical education and sports subjects. Meanwhile, the data collection technique will consist of observation sheets, interviews, and needs analysis questionnaires for students (Mahmudah & Santosa, 2021; Widoyoko, 2012). Needs analysis questionnaire instrument is presented in Table 1.

Table 1. Needs Analysis Questionnaire Instrument

No.	Question	Amount of item
1	Learning media that are often used during learning activities	1
2	The type or type of learning media that is often used during learning activities in class	1
3	Digital learning media in the form of learning multimedia will be applied to learning activities	1
4	The reason I am interested in using multimedia in learning activities	1
5	When the teacher explains the subject matter, I can understand and understand the explanation.	1

In order to see the validity of the instrument, the instrument validation technique adopted in this study is expert judgment (Arikunto, 2010), where the instrument is first consulted with experts according to their competence, before being distributed to students (questionnaire), and an interview process is carried out with the teacher. While the research procedure was carried out in two stages, the first stage was for data collection through interviews with teachers and conducting observations during learning activities. At this stage the data obtained are qualitative data sourced from teachers and students, the results of the data obtained from the first stage will then be analyzed interactively consisting of (1) data collection, (2) data reduction, (3) data presentation, and (4) concluding (Miles & Huberman, 2012). The second stage of the research procedure is through the distribution of questionnaires to students, this questionnaire contains several questions to obtain information about learning activities, especially in terms of the use of methods, media and implementation of learning evaluations that have been going on and how students are interested in innovation in the form of ICT-based learning media. The results of the distribution of this questionnaire were then analyzed descriptively qualitatively in the form of percentages for knowing how students view the need for the development of learning media that is integrated with ICT.

3. RESULT AND DISCUSSION

Result

Results of Field Studies and Interviews with Subject Teachers

The results of research related to field studies show that junior high schools as research locations show that the potential for the use and development of learning media that is integrated with ICT is quite large. As the observations carried out, it was finally identified that every teacher in the school had been accustomed to using technology, as evidenced by the ownership of ICT devices such as smartphones and laptops. On the other hand, the results of field observations also show the availability of ICT devices such as LCD projectors, tape recorders, and active speakers, which so far have not been optimally utilized. Overall, the results of the field study show that the facilities owned by the school, as well as the skills of teachers in operating technology devices, are ready and quite good, but cannot be used optimally for learning activities. Meanwhile, the results of interviews with subject teachers indicate that teachers find it difficult and overwhelmed when they have to demonstrate and re-explain the short distance running material to students who still do not understand thoroughly during the process of delivering the material. So far, it has been identified through the results of discussions and questions and answers with the teacher, that when demonstrating the movement, they still use the props contained in the printed book. This process is certainly less efficient both in terms of energy and time. All classroom teachers stated that the presence of media could accommodate the delivery of material to students, especially practical and simulated material such as short distance running. Given the presence of learning media, later students can learn independently and the material contained in it can be studied continuously and repeatedly both at school and at home. Through the results of the interview, it was also successful to identify opportunities for using ICT-based media for short-distance athletic learning when the teacher stated that students were allowed to study the material contained on smartphones/accessed via smartphones. Although indeed with very clear notes and orders from the subject teacher. Teachers also seem to support if the ICT-based learning media to be developed can be accessed on smartphones, especially with the Android operating system or computer.

Results of the Questionnaire on the Identification of the Need for Learning Media

The next presentation of data is about the distribution of the needs analysis questionnaire. The needs analysis questionnaire that has been distributed to the research sample, namely seventh grade junior high school students, reinforces that the learning media that have been used by teachers so far are less attractive and unattractive to attract students' attention as shown in [Figure 1](#).

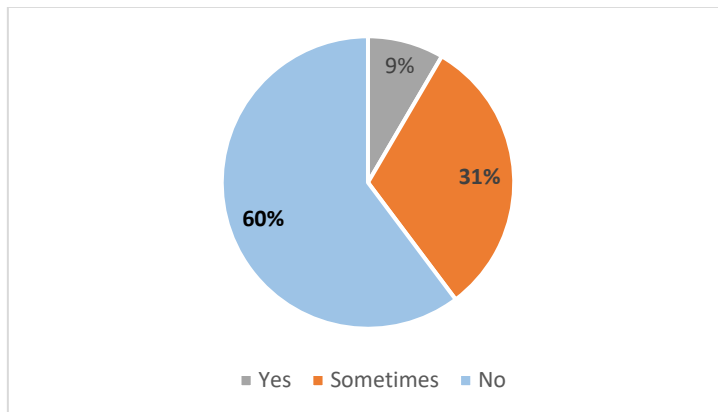


Figure 1. The Use of Learning Media by Teachers

Through this figure, information is obtained that so far, it is proven according to students' opinions that during the implementation of learning teachers almost never use learning media (60%), for the response of students who answer sometimes use a number of media (31%). Further information obtained is about the type of learning media, when the teacher teaches learning materials, for physical education and sports subjects will be shown in [Figure 2](#).

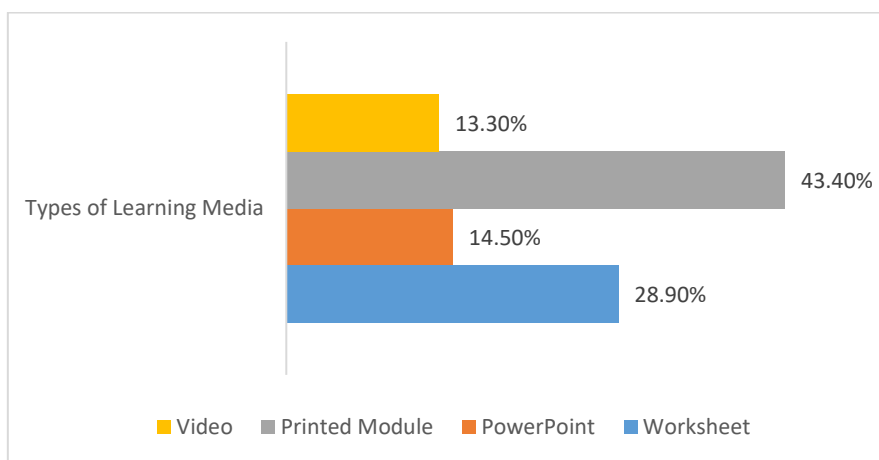


Figure 2. The Type of Learning Media Used by The Teacher

From the results of [Figure 2](#), it is known that the print module dominates the use of learning media that is currently used in physical education and sports learning with a percentage of 43.40%, followed by the use of student worksheets in the amount of 28.90%, then the use of powerpoint with a response of only 14.50% and videos in the form of tutorials for demonstrating short-distance athletic movements in the amount of 13.30%. This is certainly an indication of low motivation and achievement of competence considering that students will find it difficult when trying to demonstrate certain movements in the material. Students basically have an interest in innovation in the use of ICT-based learning media, after being given an overview of interactive multimedia. It was identified that almost all students were interested in developing interactive multimedia as a learning medium for both independent and classical learning, as well as arguments and opinions on why they were interested in developing interactive multimedia. The identification results will be shown in [Table 2](#) and [Table 3](#).

Table 2. Student's View of Multimedia

Question items	Number of respondents (N=83)	Percentage (%)
Student interest in interactive multimedia		
Interested	67	80,7%
Interested enough	16	19,3%
Not interested	0	0%
Total	83	100%

Table 3. Reasons Students are Interested in Multimedia

Question items	Number of respondents (N=83)	Percentage (%)
Reasons for students' interest in interactive multimedia		
Loads a lot of media formats	15	18,1%
Can be used on laptops and smartphones	38	45,8%
Available video tutorials and practice questions	4	4,8%
Digital format and interactive display	16	19,3%
Just interested in using	10	12%
Total	83	100%

Referring to [Table 2](#) and [Table 3](#), it can be seen that almost 80.7% of students are interested in interactive multimedia for physical education learning, this shows that students are basically looking forward to learning media innovations. This is because students have the opinion that interactive multimedia can be used on laptops and smartphones (45.8%), followed by student responses stating that interactive displays and digital formats (19.3%), and not forgetting that, students are aware of the importance of the combination of subject matter covered, such as visuals, text, narration, audio and video, in other words, containing 18.1% of various media formats.

Discussion

The data sources of this research are divided into descriptive data from interviews and field studies and data from needs analysis questionnaires. From the interview results, it is known that currently teachers find it difficult to facilitate student practice-based learning activities, because teachers have to repeatedly and quite often demonstrate various movements in this short-distance running athletic material. This is also suspected by the use of learning media which is limited to print modules, only at certain meetings the teacher curses learning videos for the learning process. Even though the use of innovative and ICT-based learning media will have more impact on students' understanding, when compared to only using print modules ([Budiarto et al., 2020](#)). In addition, the results of field studies or observations related to the availability and readiness of facilities owned by schools for ICT-based learning innovations show that schools have facilitated classrooms with LCD projectors, active speakers, and teachers who are accustomed to using laptops. Teachers in schools also almost all have their own laptops. This field fact seems to have not been optimized considering the use of learning media which is still lack of innovations. The readiness of the facilities owned by the school is indeed a factor that contributes to the success of the implementation of learning with media that is integrated with ICT ([Budiarto et al., 2020](#); [Y. Han, 2015](#); [Karunaratne et al., 2018](#)), because without the support and readiness of facilities provided by educational institutions, the implementation of ICT-based learning will only be a dream. Another support that is also a factor in the success of ICT-assisted learning is teacher competence ([Chisango et al., 2020](#); [Valtonen et al., 2019](#)), The results of the study show that almost all teachers already have laptops and are able to operate them, this of course can be optimized in the future through the use of ICT in the learning process ([Buabeng-Andoh, 2012](#)), considering the benefits and positive impacts will also follow along with the use of ICT such as increasing student academic achievement, student motivation in learning will increase, and be able to increase student learning independence ([Doğru, 2020](#); [Malik, 2018](#); [Sert & Boynueğri, 2017](#)). Interactive multimedia is one of the trends for ICT-based learning media innovation at almost all levels of education. The beginning of the rising trend of using multimedia for learning is the increasing progress and development of information technology which requires students to have 21st century skills ([Mohid et al., 2018](#); [Oliquino, 2019](#)). The results also show that about 80.7% of students feel interested in multimedia, one of the factors that can affect student interest in multimedia is due to the advantages it has. As in the aspect of the material displayed, there is freedom for students to choose subjects ([Roemintoyo et al., 2022](#); [Syahputra & Maksum, 2020](#)). The results of students' interest in multimedia were then supported by the opinions of students who stated that they were interested in multimedia because of the flexibility of its operation, where multimedia-based learning media applications were

able to be operated on computers and smartphones (45.8%), followed by their opinion which stated that the display on Multimedia tends to be interactive and has digital format attached to it (19.3%), and can contain various media formats such as audio, visual, audio-visual and animation (18.3%). It is true that interactive multimedia can also accommodate material in the form of audiovisual, text, images, etc (Misir, 2018; Sholihah et al., 2020), and its format which does have interactivity as one of the characteristics of multimedia (Kapi Kahbi et al., 2017). In addition, the flexibility of operating interactive multimedia for learning is quite high, considering that some multimedia programs for learning can be run on a computer (Ramadhani & Muhtadi, 2018; Roemintoyo et al., 2022; Yue, 2017), and smartphones (Hartiyani & Ghufron, 2020; Haryoko & Jaya, 2016; Hasyim et al., 2020).

Both operations through computers and smartphones have the same benefits and contributions to the implementation of learning. As the results of research which states that through the use of computer-based multimedia can increase student learning outcomes to 71%, besides the use of computer-based multimedia programs in learning also makes students more motivated to learn (Hoerunnisa et al., 2019; M. Li & Ren, 2018). The same thing was also expressed by other research showed that the use of computer-based interactive multimedia in learning provides a better learning experience because it can display interesting material (Sholihah et al., 2020). In addition, character building and skill enhancement can also be significantly improved through the use of interactive multimedia (Komalasari & Rahmat, 2019; Nugraha & Wahyono, 2019; Suyantiningsih et al., 2016). Meanwhile, the use of Android-based interactive multimedia is also starting to be widely implemented considering that currently students are used to living side by side with smartphones (Sari et al., 2020). The results show that smartphones have a huge opportunity to be used in the learning process (Qodr et al., 2021). Several studies have also shown the positive impact of using Android-based multimedia that can be operated on smartphones on improving student academic achievement, student attitudes, student skills, and student character building materials can also be facilitated through the use of Android-based interactive multimedia during the learning process (Hasyim et al., 2020; Lestari et al., 2019; Sulistyo & Kurniawan, 2020). Overall, the presence of computer-based and smartphone-based multimedia technology, with its various advantages, can bring a lot of information or subject matter into the classroom. Illustrations in multimedia through images, videos, sounds, and animations can make it easier for students to understand the material which in the end will have an impact on achievement both academically and non-academically (M. Han & Niu, 2019; Manurung & Panggabean, 2020; Saputri et al., 2018). Application programs in the form of interactive multimedia can make students understand the material. In line with the findings of previous studies, interactive multimedia helps students gain better material knowledge to improve students' higher order thinking skills and improve students' academic achievement (Misir, 2018; Nugraha & Wahyono, 2019; Suparno, 2018). Interactive multimedia for learning physical education and sports as a whole can be one of the frameworks for development and innovation later in the aspect of utilizing ICT integrated learning resources in the form of learning media. ICT-based learning media innovation is very necessary in order to support in the era of the industrial revolution 4.0 which is currently leading to the era of society 5.0. Given the many benefits of interactive multimedia as a learning medium to support and facilitate student learning activities, it is therefore very important to immediately realize it in the form of concrete actions. This innovation is basically intended to facilitate students in the learning process as an effort to form superior human beings. The potential of using interactive multimedia for learning cannot be separated from various empirical facts that have proven that interactive multimedia is one of the factors that contributes significantly in optimizing the process of achieving learning goals. Through this research, other researchers can use the results of this research as a basis for developing interactive multimedia products for learning activities in other subjects, taking into account the characteristics of teaching human resources, material characteristics, facilities, and student characteristics.

4. CONCLUSION

Based on the results of the study, it shows that so far, the implementation of short distance running athletic learning materials still tends to use the type of print module media, while for school facilities there are already available LCD projectors and each teacher also has a laptop as a technology tool to support learning activities. Several studies have found empirical facts that the use of interactive multimedia as a digital learning medium has various benefits for students. It is hoped that the results of this research can be the basis for the sustainability of the interactive multimedia product development process. Further research can be carried out by other researchers in the context of developing interactive multimedia products in both commuting and smartphone-based formats, and can be adapted to other subjects. In addition, through this research, it is also expected that teachers will improve their competence through the development of interactive multimedia products for the subjects they teach.

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