



The Role of Multimedia in The Process Physical Education Learning: Study Literature

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Abstract

Education in the era of globalization means the integration of national education into world education. Students must be equipped with adequate competencies to be able to develop in the highly competitive digital era. There are several problems and challenges facing the world of education in the digital era, including the quality of education, professionalism of teaching staff, culture (acculturation), learning strategies, challenges for improving management, and challenges for advances in science and technology. The development of physical education needs to utilize multimedia to meet the needs of teachers and students in facing the era of industrial revolution 4.0. The use of multimedia in supporting the success of physical education learning needs to be developed from its various functions. The aim of this literature review is to identify and analyze research trends, data collection and search methods in the 2012-2022 time period. Articles are selected according to the topic, namely multimedia in physical education and published online by the Journal "Pedagogy of Physical Education and Sports". The results of the analysis show that the use of multimedia in physical education is not only limited to providing learning media, but can be used as an assessment instrument and study of sociological phenomena of interactions between teachers and students in achieving learning goals.

Keywords: Learning¹, Multimedia², Physical Education³, Globalization⁴

INTRODUCTION

Currently, in the modern era, many technological developments are unavoidable. The lives of today's teenagers are very different from those of the past. Carnoy, M. (2000) states that education today is very different from before. Currently, digital technology has reached every aspect of human life, including education. In the current era of globalization, rapid advances in technology and information cannot be avoided, and their impact on the world of education cannot be avoided. In the digital era, the flow of information cannot be avoided because it cannot be controlled. Many new innovations that support learning are also brought about by technological advances in the education sector (Malik, R. S., 2018). One of them is the increasingly diverse learning environment due to technological advances. The world of education has experienced changes, even changes in philosophy, paths and goals (Kinshuk. et al., 2016).

Rahmatullah, A. S. et al. (2022) stated that global demands require the world of education to adapt to technological advances to improve the quality of education, especially by adjusting the use of technology in the world of education, especially in terms of learning. Furthermore, Collins, A., and Halverson, R. (2018) stated that digital technology can also help change people's behavior, including education and student behavior, through searching, collecting, processing, sharing and documenting teaching materials as needed. Abdulrahaman, M. D. et al. (2020) stated that combining teaching materials with digital technology in the learning process can make lessons more interesting and provide motivation, because mixing teaching materials is not only monotonous in text, but can also be mixed more creatively and interestingly by combining images, sound, video, and animation. Thus, it can have a positive impact on changes in learning behavior.

Qureshi, M. I. et al. (2021) stated that although digital technology is not new and appeared suddenly, it has been developing since the 80s. Therefore, they call the digital era up to the 21st century. Currently, digital technology has become a necessity. It should be able to help the world of education with the help of developing this knowledge. However, the speed of information does not always have a positive effect. Every advancement in information technology in the modern era has positive and negative effects (Gisbert, M. & Bullen, M. 2015). Vistari, L. (2023) said that in the 21st century, digital technology is becoming increasingly important in terms of learning and skills innovation. In fact, learning technology will develop over time. Apart from that, Montrieux, H. et al., (2015) in the implementation of daily learning we also often encounter the use of technological developments in the world of education, as is often done by teachers, namely integrating technical tools into learning. Puspitasari, J. et al., (2023) emphasized that the development of science and technology has a positive impact on the openness and dissemination of knowledge and information throughout the world across the boundaries of space and time. The existence of information technology in the world of education can break down the distance between teachers and students (Anderson, T., & Rivera Vargas, P. 2020).

Devices and applications that are very easy to learn and use as a learning environment have emerged as a result of rapidly developing technological developments, according to Haleem et al. (2022) Technological tools that are well known to the public are devices that have many applications that are easy to use to search for research information. This device has many social media applications that can be used to search for research materials to be

searched for. Furthermore, Basar, Z. M. et al. (2021) stated that the use and dissemination of information has become very easy due to advances in easily accessible internet technology. Additionally, this technology allows teachers and students to apply what they have learned without face-to-face meetings or online applications. This shows that technology is very important in modern learning. According to Wall, J. (2016), the integration of national education towards modern education is the definition of education in the era of globalization. To enable students to thrive in the highly competitive digital era, students must have adequate skills. The quality of education, teacher professionalism, culture, learning strategies, management improvement issues, and advances in technology and science are some of the problems that arise in the world of education in the digital era. Okoye, K. et al. (2023) say that technology helps learning to achieve the desired results.

The development of information and digital technology has had a major impact on how humans use, and obtain information and knowledge has been greatly influenced by advances in information and digital technology. Gherheş et al. (2021) stated that the knowledge learned today is not the same as the knowledge learned in the past. Nowadays, someone can access and use information from various sources via the internet. Educational engineering focuses on creating effective learning programs and activities (Cayeni, W. & Utari, A. S., 2019). Dunlosky et al. (2013) stated that effective and efficient learning programs can basically help students acquire the skills they need. They also said that effective and efficient learning programs can increase students' motivation to learn. Muhammad Rusli et al. (2020) stated that effective and efficient learning programs can also extend the retention of material or content studied. Lastly, students have the opportunity to apply the knowledge and skills they learn through a well-functioning learning program. Furthermore, according to Gusho et al. (2023), the aim of educational technology is to improve the quality of learning programs through a systematic planning, development, use, management and evaluation process.

According to Kuleto et al. (2021), to meet students' needs in the era of industrial revolution 4.0, multimedia must be used in the creation of physical education. In this era, teachers are the people responsible for the education of iGeneration students. Shifflet, R., and Weilbacher, G. (2015) stated that teachers cannot monitor students for long periods of time with more time than they have. By using learning media technology, teachers' concerns that students may experience negative effects from using devices can be reduced. According to the results of research conducted by Rosen (2011), teachers can use students' love of

technology to devote their attention to achieving academic goals. In this way, teachers not only engage students more in the learning process, but also free up class time to help students find meaning in the information they get from technology.

The aim of this literature review is to discover the types of use of multimedia in physical education, which are researched and published online by the journal *Physical Education and Sport Pedagogy*. It is hoped that the findings of this research will broaden physical education teachers' perspectives on how multimedia functions in the learning process. This may be an effort to meet the needs of educators and students in the era of industrial revolution 4.0. From what has been explained previously, it can be concluded that technology has a very strong influence on education. There are many advantages that can be used to help teachers in teaching and learning and communicating at home with their students, both under parental supervision at school and at home. However, there are negative impacts of technology, but teachers and parents can monitor and control their students so that they are not affected.

METHODS

The research method used was a literature review following the literature review procedure by Machi and Mcevoy (Leitner et al., 2017). A literature study is a research design that collects data sources related to a topic. The information base used is Google Scholar. The way this method works is by analyzing the journal and then making a summary regarding the research questions and objectives, article characteristics, namely Accredited National and International Journals, SINTA and Scopus Accredited Journals. Search results in the 2012-2022 period found 9 research articles on the use of multimedia in physical education.

RESULT AND DISCUSSION

The results of literature research on 9 articles regarding the use of multimedia in physical education include: a) learning media; b) assessment; and c) tools for collecting data about teacher and student participation in physical education learning. More specific information about the use of multimedia as a learning tool is presented in Table 1, information about the use of multimedia in the digital assessment process is presented in Table 2, and information about the use of multimedia in survey data collection tools for interactions between teachers and students in physical education is shown in Table 3.

There are 5 research articles on the use of multimedia as a learning tool. Publications

appeared in 2016, 2017 and 2022. Interactive multimedia learning models are more effectively used in direct learning. In this case, pencak silat uses the sickle kick technique. Providing a tutorial on how to practice the move will greatly increase its impact. Apart from that, the use of multimedia offers an Android-based floor exercise learning solution in physical education and is considered very effective for use by teachers and students in the learning process. Apart from that, application development in the learning process has succeeded in increasing students' interest and motivation to learn. There are differences in learning interest between students who use interactive multimedia learning models and students who do not use interactive multimedia. Successfully achieving the learning objectives of the cooperative learning model can actually be assisted by physical education applications available on the internet.

There is one research article on the topic of using multimedia in the digital assessment process. The program's computer-based assessments are designed to combine to assess students' physical, cognitive and affective abilities. Teachers can carry out assessments authentically and neatly recorded. Then there are 3 research articles that discuss the use of multimedia as a tool for collecting data on teacher-student interactions in physical education. The research results show that multimedia can be a means of examining sociological symptoms of teacher-student interaction in relation to the successful implementation of physical education. The multimedia content used is videos about physical education learning uploaded to You Tube and online discussion forums. Utilizing websites to organize online distance courses in the field of adaptive sports education can be a solution for physical education teachers who want to develop their pedagogical and professional skills. Understanding the use of technology in the field of physical education also encouraged Enright and Gard (2016) to examine Bourdieu's sociological theory, so that the idea of combining technology with sociological interactions in physical education learning was born.

Tabel 1. Use of Multimedia as Learning Media

Author (Year)	Media Type	Research purposes	Results
Fellyson Titting, Taufik Hidayah, Harry Pramono. (2016)	application	To see how effective the development of Android-based floor exercise	The conclusion of the research is to produce an Android-based floor exercise learning product for

			multimedia learning is on students' minimum completeness criteria	high school physical education that is effective for use by teachers and students.
Maranthika Setyantoko. (2017)	Athletic Smart Apps		This research aims to develop the Athletic Smart Apps application and determine the feasibility of the product based on expert validation and usability factors	The results of this research show that the smart athletic application is suitable for use and is successful in increasing students' interest and motivation in learning
Ade Gunawan, Deni Darmawan, Maskur. (2017)	Interactive Multimedia Tutorial Model		The aim of the research is to determine the understanding of students' learning interests who utilize Interactive Multimedia Tutorial model	There is a difference in increasing interest in learning between students who use tutorial model Interactive Multimedia and students who do not use tutorial model Interactive Multimedia.
Diny Anggraini Adnas, Jevin Tan. (2022)	Multimedia Development Life Cycle (MDLC).		The aim of the research is to understand the understanding of students' learning interests who utilize the Multimedia Development Life Cycle (MDLC).	With learning media, students can learn more widely and more. So you get interesting learning.
Warnadi Julianto, Andrie Chaerul, Ardawi Sumarno. (2022)	Internet		To test the influence of internet-based pencak silat learning media on crescent kick techniques at SMK Texar Klari, Karawang.	The results of this research show that the internet-based pencak silat learning media for crescent kick techniques at SMK Texar Klari, Karawang has succeeded in increasing

Table 2. Use of Multimedia in the Digital Assessment Process

Author (Year)	Media Type	Research purposes	Results
Penney, Jones Newhouse, Cambell. (2012)	Digital physical education assessment instrument	Get to know data from the first two years of a research and development project on digital assessments on the psychomotor skills. Research focuses on design, implementation, and experience of conducting digital assessments.	The integrated computer-based assessment tasks and practical components were designed and adapted for a variety of physical activity settings and successfully implemented in the project schools. The students found the assessment tasks authentic and meaningful for Physical Education. Students love the way the practical and theoretical are combined in the assignments

Table 3. Use of Multimedia in Interaction Data Collection Instruments Teachers and Students in Physical Education Learning

Author (Year)	Media Type	Research purposes	Results
Quennerstedt (2013)	Video of the physical education learning process uploaded on YouTube	Analyze the various students participate in physical education to inform opinions about their practices.	Categorizing how actions in a constant flow of actions, contributes to other actions oriented in a certain direction in a certain situation. Four themes emerged from the analysis: doing sports, trying and having fun, fitness training, and dancing. Each theme describes how students and teachers interact and how they through their participation shape the content of physical education practice
Lauritsalo, Sääkslahti, Puttonen (2015)	Open discussion forum on the internet	Testing types Extrinsic factors underlying students' opinions expressed in internet discussion forums about the	The results show clearly that of the total extrinsic factors only 8% are in the positive opinion category and up to 61% are in the negative opinion category. Findings revealed that teachers play an important role in students' enjoyment of physical

		<p>experience of taking physical education at school</p>	<p>education, as indicated by the fact that the teacher's personality and behavior were mentioned most frequently (40% of all opinions). Almost every fourth opinion concerns the classroom environment. In third place, accounting for 16% of opinions are issues related to the curriculum.</p>
Sato, Haegel (2017)	Website	<p>Investigating the professional development experiences of in-service Physical Education teachers during and after graduating from Professional Education in the Field of Adaptive Physical Education online</p>	<p>Can be explained in the logic of the andragogy theory of Making Adult Educators. Three interrelated themes emerged from the data. The first theme, role transformation, described how participants expanded their roles as physical educators, and were motivated to gain medical knowledge of conditions and intervention techniques, which could be embedded in physical education lessons for students with disabilities. The second theme, professional community development – mentorship, describes experiences in which participants, during, and after completing their courses, are assigned to serve as resource specialists. Adaptive Physical Education to help Education colleagues Physical learning to teach, assess, and evaluate students disabled people at school. The final theme, understanding the current status of Physical Education, represents the participants' views taking Professional Education in Physical Education Adaptive online is the only opportunity to find out about employment conditions, Adaptive Physical Education resources, and other school policies</p>

CONCLUSION

The results of the analysis show that multimedia in physical education can be used to do many things besides providing learning media. They can also be used as a tool to conduct research on the sociological phenomenon of how teachers and students interact to achieve learning goals. Technology can greatly change education. There are many advantages that can be used to help teachers in teaching and learning and communicating at home with their students, both under parental supervision at school and at home. However, there are negative impacts of technology, but teachers and parents can monitor and control their students so that they are not affected.

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