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The Utilization of Interactive Video Technology in Learning Basic Locomotor Motion in Physical Education: Literature Review

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Abstract

Physical Education, Sports, and Health have an important role in developing students' motor skills, including the basic movement of the locomotor. However, challenges such as a lack of variety of learning methods and less attractive media often hinder the learning process. Research Objectives This article aims to review various literature related to the use of interactive video technology in learning basic locomotor movements in physical education at the elementary school level. Methods This study uses the literature review method by analyzing relevant articles, journals, and literature sources published in the last 10 years. The reviewed literature focuses on the development, implementation, and effectiveness of the use of interactive video media in learning basic locomotor motion. The results of the study show that interactive video technology has several advantages, such as providing clear visual demonstrations, improving students' understanding of the material, and encouraging active participation through interactive features such as quizzes or simulations. In addition, this media has been proven to be effective in improving student learning outcomes compared to conventional methods. Factors such as video design, teacher engagement, and the suitability of the material with the curriculum are important aspects that affect the success of implementation. The conclusion is that the use of interactive video technology in learning basic locomotor movements in physical education has a positive impact on the motivation, involvement, and learning outcomes of elementary school students. This study recommends the further development of interactive video-based learning media that is in accordance with the needs of students and the school curriculum.

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INTRODUCTION

Physical Education, Sports, and Health is one of the subjects that aims to develop students' physical skills, motor abilities, and physical fitness (Bafirman et al., 2023). One important aspect is the learning of basic locomotor movements, which includes movement skills such as walking, running, jumping, and long jumping. However, the implementation of basic motion learning often faces challenges, such as the limitation of interesting learning media and less varied methods, so that it can cause low student interest (Hb et al., 2023). In the digital age, interactive video technology has emerged as an innovative solution that is able to provide clear visualization of movements, actively engage students, and improve concept understanding through direct interaction (Aulia & Kurniawan, 2021; Hadjarati et al., 2022). Therefore, the use of technology-based media is important to be integrated in the learning process of basic locomotor movements, especially for elementary school students who need an interesting, effective, and fun learning approach.

The use of technology in learning, especially interactive video media, has grown rapidly in line with the advancement of digitalization in the field of education (Candra et al., 2023). Interactive video media offers a combination of gesture visualization, audio, and interactive elements, such as quizzes or simulations, allowing students to learn actively and independently (Fadhillah et al., 2023; Huda & Kurniawan, 2021; Rozak et al., 2021). In the context of physical education, especially in the basic motion material of locomotors, this media provides convenience in conveying practical concepts through clear and interesting visual demonstrations (Zarya & Welis, 2021). Previous research has shown that interactive videos are more effective in improving students' motivation, concept understanding, and skills than conventional methods (Gunawan et al., 2021; Wintoro et al., 2021). However, challenges such as curriculum adaptation, access to technology, and teachers' skills in developing interactive media are still issues that need to be overcome. With the development of technology, the integration of interactive video in basic locomotor motion learning has great potential to support more innovative learning and according to the needs of 21st century students.

This study offers a new contribution in understanding the effectiveness of the use of interactive video technology specifically on learning basic locomotor motion in physical education (Humairoh et al., 2023). Different from previous studies that tended to discuss learning media in general, this study specifically reviewed how interactive elements in videos, such as motion simulations, reflection quizzes, and real-time visual guides, can improve the motor skills of elementary school students (Hirwana et al., 2023). This technology-based approach not only presents a demonstration of movement, but also allows students to actively participate and understand the concept of movement in depth, which has not been widely discussed in previous research. In addition, this article examines the aspects of effective video design and its suitability with the needs of students and the elementary school curriculum, so that it can be an important reference for the development of innovative learning media in the future.

This research makes a real contribution to enriching the literature on the development of technology-based learning media in the field of physical education. The results of this study can be a guide for teachers, media developers, and policymakers in designing and implementing effective interactive videos for basic locomotor motion materials (Putra et al., 2023). With a focus on evaluating aspects of interactivity and relevance of the material, this study helps to identify the key factors that influence the success of interactive video-based learning (Hasibuan et al., 2024). The findings also provide new insights into how technology can improve student motivation, engagement, and learning outcomes, contributing to improved learning quality at the primary school level.

The main evaluation in this study is to measure the extent to which interactive elements in the video, such as the movement step guide, interactive quizzes, and direct feedback features, can improve the basic locomotor mastery of elementary school students compared to conventional learning methods (Aidiansyah et al., 2021; Dewantoro et al., 2021). This evaluation focuses on aspects of student motivation, active

participation, and learning outcomes to ensure that interactive video media is not only visually appealing but also effective in achieving specific learning goals.

METHODS

This study uses a literature review method with a systematic analysis approach to evaluate and review research related to the use of interactive video technology in learning basic locomotor movements in physical education. The process begins with literature identification through searches for scientific articles, journals, proceedings, and books from various academic databases, such as Google Scholar, Scopus, PubMed, and ResearchGate. Keywords used include "Interactive Video," "Basic Locomotor Motion," "Physical Education," "Interactive Learning Media," and "Elementary School." Literature selection is based on inclusion criteria, namely research published in the last 10 years (2013–2023), relevant to the theme, involving elementary school students as research subjects, and available in full text. Meanwhile, articles that are irrelevant, non-scientific, or do not address the main topic are excluded from the review.

Once the literature is selected, the data is encoded based on important elements, such as research methods, interactive video designs developed, student learning outcomes (motivation, concept understanding, and motor skills), as well as success factors and implementation challenges. The analysis is carried out in a descriptive and thematic manner to identify the patterns, trends, and main findings of each literature. This process aims to synthesize data from various studies in order to provide a comprehensive overview of the effectiveness of interactive video in learning basic locomotor motion. To ensure the validity and reliability of the study results, data triangulation was carried out through comparison of findings from various relevant sources. This research is designed to produce practical and theoretical guidelines for the development of innovative interactive video-based learning media that is in accordance with the needs of elementary school students.

RESULT AND DISCUSSION

Table 1. Critical Apparsial Analysis

Aspects	Findings	Information
Student Motivation	Interactive videos increase student interest and engagement.	Video interactivity (quizzes, simulations, feedback) creates an engaging learning atmosphere.
Understanding Concepts	Students understand the basic motion of the locomotive more clearly through interactive visualization of movements.	Repetitive motion demonstrations and animations help students understand the technique in more depth.
Motor Skills	Mastery of basic locomotor motor skills has increased significantly.	Students are able to imitate, practice, and improve movements better than conventional methods.
Success Factors	Engaging video design, relevant technology, and teacher support as learning facilitators.	Teachers play a crucial role in maximizing the benefits of interactive videos.
Challenge	Limited access to technology, lack of teacher training, and adjustment of materials to the curriculum.	Need for special technology infrastructure support and training for teachers.

This table summarizes the results of the study related to the effectiveness and challenges in the application of interactive video technology for learning basic locomotor motion.

The results of this literature review study show that the use of interactive video technology in learning basic locomotor movements in physical education has a positive impact on the motivation, concept understanding, and mastery of motor skills of elementary school students. Some of the main findings from the literature analyzed are as follows:

Increased Student Motivation

Interactive video media has been proven to be able to increase student motivation in participating in learning. Video interactivity, such as reflective quizzes, simulations, and live feedback, makes students more interested and actively engaged. This creates a more interesting learning atmosphere than conventional methods.

Visualization and Concept Understanding

The demonstration of motion in the interactive video helps students understand the basic locomotor motion concept more clearly. Animations and repetition of movements tailored to students' needs allow them to identify correct techniques and errors that need to be corrected. Additionally, interactive features allow students to explore the material independently, thus reinforcing their understanding.

Effectiveness in Mastery of Motor Skills

The use of interactive videos allows students to better see, imitate, and practice movements. The analyzed study showed that students who learned using interactive video had a significant improvement in mastery of locomotor skills, such as walking, running, jumping, and long jumping, compared to students taught using conventional methods.

Success Factors and Challenges

The success of the implementation of interactive videos is greatly influenced by attractive video design, the use of relevant technology, and support from teachers as learning facilitators. However, some of the challenges identified include limited access to technology in some schools, lack of teacher skills in developing and using interactive videos, and adapting materials to the applicable curriculum.

Overall, the results of this study confirm that interactive video is an effective learning medium to improve the quality of basic locomotor motion learning in elementary schools. Further development of this medium, particularly in terms of technology adaptation and curriculum integration, is strongly recommended to support wider implementation.

Discussion

The results of the study show that interactive video technology has great potential in increasing the effectiveness of learning basic locomotor movements in physical education (Sania et al., 2022). Increasing student motivation through interactivity features, such as simulations and live feedback, is one of the prominent aspects (Kasuma et al., 2023). This shows that learning media that is visually appealing and actively engages students is able to create a more fun and participatory learning atmosphere. In the context of primary school students, who tend to be more responsive to visual and interactive media, interactive videos serve as a tool that not only supports the understanding of concepts, but also integrates elements of learning while playing. In addition, the clear visualization of movements in interactive videos helps students understand the correct technique, identify mistakes, and gradually improve their motor skills, such as walking, jumping, and running.

However, the implementation of this media is inseparable from challenges, such as the limitations of technology infrastructure in schools and the lack of teacher competence in developing and utilizing interactive video media (Irfan & Latief, 2023; Lawrance, 2023). These challenges underscore the need for stronger support from governments, such as the provision of technology tools and intensive training for teachers to integrate these media into learning (Kurniawan et al., 2022; Zulfikar et al., 2023). In addition, the success of interactive videos also relies heavily on their attractive design and suitability to the needs of students as well as the curriculum. Therefore, to maximize the benefits of interactive video technology,

collaboration between media developers, teachers, and policymakers is needed in creating learning media that is relevant, accessible, and aligned with educational goals. This interpretation confirms that interactive video technology is not only a learning aid, but also a catalyst for change in the approach to locomotor basic motion learning in primary schools.

The results of the study show that the use of interactive video technology is more effective than conventional learning methods in improving the basic locomotor skills of elementary school students (Ariyanto et al., 2020; Tuasikal et al., 2022). The analyzed study showed that students who used interactive video media experienced significant improvements in motivation, concept comprehension, and mastery of techniques compared to students who only received learning through simple lecture or practice methods without the support of interactive media (Haqiqi & Sari, 2024; Ramadi & Vai, 2024). In addition, data analysis showed that students who learned with interactive videos showed more active participation and were better able to identify and correct movement errors. Meanwhile, conventional methods tend to present limitations in motion visualization and lack of interactivity, resulting in less than optimal learning outcomes. Therefore, the use of interactive video technology provides an advantage in providing a more comprehensive and effective learning experience.

CONCLUSION

Based on the results of the literature review, it can be concluded that the use of interactive video technology in learning basic locomotor movements in physical education can significantly increase the motivation, concept understanding, and motor skills of elementary school students. This media has proven to be effective in creating interactive, visual, and participatory learning experiences, which are in line with the needs of students in the digital age. In addition, the successful implementation of this media depends on the appropriate design, support of technological infrastructure, and training for teachers to optimize their use. Thus, the integration of interactive video technology in basic locomotor motion learning can be an innovative solution to improve the quality of physical education in elementary schools.

CONFLICTS OF INTEREST STATEMENT

Regarding this study, the author declares that there is no conflict of interest.

AUTHOR CONTRIBUTIONS

Study concept and design: Rosdiana Sartika. Acquisition of data: Padli. Analysis and interpretation of data: Sepriadi. Drafting the manuscript: Rosdiana Sartika. Critical revision of the manuscript for important intellectual content: Nugroho Susanto. Statistical analysis: Rosdiana Sartika.

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