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Creative teacher's products: Identifying innovation in physical education learning

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Abstract
This study aims to identify innovations in physical education (PE) learning carried out by teachers. This study is a systematic review on the Google Scholar database. We set inclusion criteria, namely articles published in the last 5 years, the author is a teacher, and the searching keyword for the article is 'innovation in physical education learning'. Therefore, any article wriiten by non-PE teachers was excluded, as it can be seen from the authors' affiliation. The results of the study refer to the analysis of 13 articles that match the criteria, indicating that teachers have made innovations in physical education learning. The innovations include learning media, models, and methods. The Innovations were carried out to improve students' learning outcomes in the cognitive, affective, and psychomotor domains, as well as to increase the students' learning motivation. The learning environment designed by the teacher will affect the learning process and student learning outcomes. Finally, we suggest PE teachers to continuously make innovations, not only to improve learning outcomes, but also to provide memorable learning experiences at every meeting.

Keywords: innovation product, physical education, teachers' creativity

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INTRODUCTION

The problem of lack of enthusiasm of students for learning Physical Education can be caused by various factors, both from within the students themselves, such as lack of interest, fatigue, or lack of self-confidence, or from outside, such as monotonous teaching methods, uninteresting materials, limited facilities, uncomfortable learning environment, inappropriate lesson schedules, and peer influence (Wei, 2019). To increase student enthusiasm, several efforts can be made, including varying learning methods through games and play approaches, creating a positive and supportive learning atmosphere, paying attention to students' interests and abilities in selecting activities, using interesting learning media, and conducting ice breaking for refreshment.

Teacher creativity that encourages the development of new learning methods and creates a stimulating environment is a form of teacher innovation that designs variations to increase student interest. Improving the quality of learning in the field of physical education has been shown to have a positive impact on student learning achievement. Increasing teacher creativity and innovation is important to achieve optimal learning achievement in physical

education (Fjortoft et al., 2018; Pahlawani & Nining, 2023; Pakpahan et al., 2021; Pangestu & Hermanto Karwan, 2021).

Improving the quality of learning in the field of physical education has been proven to have a significant positive impact on student achievement because of its holistic approach, touching on physical, cognitive, and social-emotional aspects. Physically, quality learning does not only focus on monotonous activities, but on creative and innovative methods, such as modified games and selected sports that increase participation and enthusiasm.

Technology refers to devices, methods, and systems developed to solve problems and improve human life. Technology covers a wide range of fields, including information and communication technology. In general, technology refers to the application of scientific knowledge for practical purposes (Eswara, 2023). Slow-motion and playback features allow students to clearly see posture and movement errors, making feedback more personalized and effective. In the classroom, projectors or interactive whiteboards are used to show technique videos, game strategies, or even virtual simulations, making theoretical learning more visual and engaging. Technology acts not only as a tool, but also as a motivator that increases student engagement, personalization of learning, and understanding.

Teachers need to innovate by developing teaching ideas to stimulate students' participation, and students need to innovate in teaching methods to exert their subjective initiative in classroom learning, enhance the activeness and interest of sports method theory from the two aspects of "teaching" and "learning", and realize the innovation, optimization and advancement of sports teaching method theory. Teaching should also realize the principle of person-oriented, which varies from person to person according to the gender, physical quality and development of different students (Fan, 2022).

To increase student motivation, teachers need to innovate by utilizing technological developments. Innovation in learning methods can be done by integrating interactive technology such as digital quizzes, virtual simulations, or project-based learning that uses digital media. In terms of equipment, teachers can utilize devices such as projectors, computers, tablets, or interactive boards to make the learning process more interesting and easier to understand. In addition, technology-based learning models such as flipped classrooms, blended learning, and gamification can provide a more dynamic and enjoyable learning experience for students. The use of technology creatively and on target will be able to increase active participation, curiosity, and student motivation in participating in learning.

RESEARCH METHOD

This study is a systematic review study with the Google Scholar database. The researcher set inclusion criteria, namely articles published in the last 5 years, the author is a teacher, and the search keyword for the article is innovation in physical education learning, as shown in Table 1. The exclusion criteria in this study are articles written not by physical aducation teachers.

The results of this study refer to the analysis of 13 articles that match the criteria, indicating that teachers have made innovations in physical education learning. This study uses a descriptive analysis technique that is carried out carefully and systematically to synthesize the results of various studies textually, thus providing a holistic understanding. The stages of article quality assessment use the STROBE Statement Checklist by 2 researchers to ensure objectivity.

Table 1. Criteria of article inclusion

Inclusion Criteria	Exclusion Criteria
- Articles published in the last 5 years.	- Articles published in more than 5 years.
- The author or one of the authors is a teacher.	- None of the author is a teacher.
- Keywords for the article are related to innovation in physical education learning.	- Keywords for articles are not related to innovation in physical education learning.

The research bias assessment used is the Cochrane Collaboration's Tool. Identification in this study from beginning to end is presented in the PRISMA Flowchart (See Figure 1).

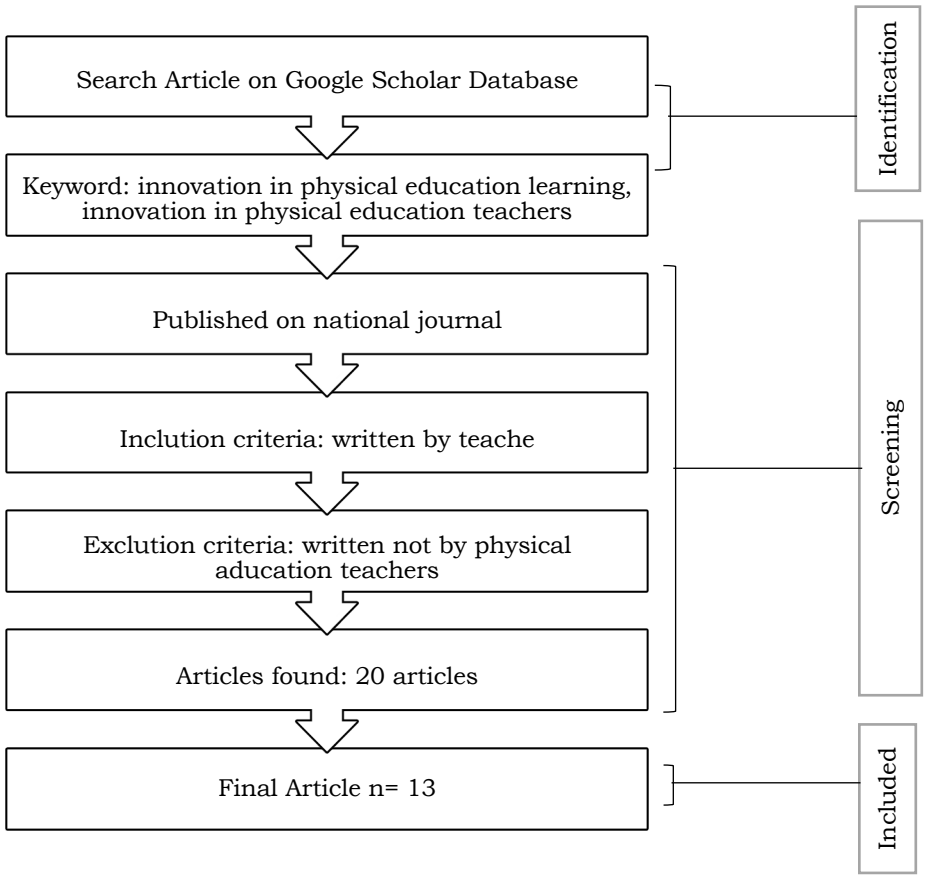

Figure 1. PRISMA flowchart

RESULTS AND DISCUSSION

The results of the study refer to the analysis of 13 articles that meet the criteria. Table 2 shows the analysis of the papers identified during the literature searching. It shows that teachers have made innovations in physical education learning. Although both aim to improve physical education learning, each study has a more specific purpose, such as testing the effectiveness of a method, developing a model, or finding out the relationship between variables.

Table 2. Analysis of article collection

Title	Purposes	Phenomenon of Interest	Results
Basic Movement Improvement Through Kasti Games (Al-fathi et al., 2024)	The purpose of this study is to improve reciprocal learning in the classroom, especially students' basic movements using the game of baseball.	This study focuses on improving students' basic movements through the use of baseball in the classroom environment.	The results of cycles 1 and 2 show average values for cognitive, affective, and psychomotor with varying average values.
Development of Archery Flexibility Training Model (Susanto et al., 2024)	The purpose of this development is to produce training media in the form of a pocket book of flexibility models for beginner-level students that are interactive in basic theoretical competency material.	Development of archery training products that integrate flexibility training for beginners	The average percentage of material eligibility of 91% is in the very feasible category, and the average percentage of media eligibility of 85.4% is in the very feasible category. This archery technique training model book with flexibility is very feasible to use as training material.
Utilization of Blended Learning in Basketball (Margiyani, 2021)	This best practice aims to improve students' basic basketball movement skills during the Covid-19 pandemic by implementing blended learning.	Improving basic movement skills in basketball using blended learning during the Covid-19 pandemic.	The results of implementing blended learning can improve learning practices in playing basketball. The general ability to play basketball increased from an average of 66.62 to 76.75, and passed the minimal criteria.
Increasing Motivation to Learn Physical Fitness with Circuit Training (Soemaryoto, 2022)	This Classroom Action Research aims to improve students' learning motivation through a video-assisted circuit training model (Vidjar) for Physical Fitness material XI IPS SMAN 3 Yogyakarta semester 2 of the 2021/2022 academic year.	Improving students' learning motivation in Physical Fitness material using a video-assisted circuit training model.	The results of the study showed that the circuit training method is effective in increasing learning motivation in Physical Fitness equipment.
PJOK Learning Based on Blended Learning in Junior High School	The purpose of this article is to discuss blended learning-based physical education and	This study focuses on the use of blended learning in physical education and	Blended Learning offers benefits to teachers and students, including facilitating educator development, providing practical

Title	Purposes	Phenomenon of Interest	Results
(Victoria et al., 2021)	sports at the junior high school level.	sports at the junior high school level.	opportunities for independent learning, and fostering active and responsible learners.
Innovative Learning Practices of Leading Teachers (Novita, 2022)	This study aims to describe the implementation of innovative learning practices of Teacher Leaders Batch 1 of Bima Regency at SDN Inpres Tenga	This study explores the application of innovative learning, especially using a blended learning model, to develop a student-centered learning environment and promote independent learning.	The blended learning model is still in the early stages of implementation at SDN Inpres Tenga. The initial stage carried out is to train students to receive questions and assignments through online applications (especially WhatsApp) and send answers online. The application of blended learning contributes to improving students' literacy skills.
Implementation of Think-Pair-Share Model in PJOK (Susila, 2022)	The purpose of this study is to improve the learning outcomes of physical education subjects for grade VI students in Semester I of SD Negeri 3 Bontihing Singaraja	This study focuses on the application of the Think-Pair-Share cooperative learning model to improve student achievement in Physical Education, Sports, and Health	The results of the study indicate that the application of the TPS (Thing-Pair-Share) type cooperative learning model in physical education subjects has increased student achievement.
Traditional Egrang Game in Elementary School PJOK (Sungkari et al., 2024)	The purpose of this study was to determine the implementation of traditional stilt games in physical education learning for Grade 1 Elementary School Students.	This study focuses on the implementation of traditional stilt games in PJOK learning.	The results of this study are the level of stilt training skills in grade 1 elementary school students, both male and female, based on balance skills, eye-hand coordination, and eye-foot coordination are in the "Good" category.
Utilization of Audio Visual in Basketball (Hakim & Basuki, 2023)	The purpose of this study was to determine the effect of using audiovisual media in learning basketball skills.	The use of audiovisual aids in teaching basketball.	The results of the study showed that learning basketball shooting using the application of audiovisual media was very effective in improving student learning outcomes, which can be seen from students who got scores

Title	Purposes	Phenomenon of Interest	Results
			above the KKM increasing in the final cycle
Integration of PjBL with Inclusive Teaching Style in Volleyball (Ardinnata & Mashud, 2023)	The purpose of this study is to describe the integration of project-based learning models with inclusive teaching styles in volleyball skills learning.	Integration of project-based learning and inclusive teaching in volleyball skills.	Project-based learning can help students develop skills independently.
Effectiveness of Peer Teaching in PJOK (Dwi Silviyani et al., 2023)	The purpose of this study was to determine the effectiveness of the application of the peer-teaching learning model to the physical education learning process at SMPN 2 Leles Garut.	Peer Teaching Model in the physical education Learning Process	The results of the study indicate that the peer-teaching learning model is effective in the physical education learning process
Integration of PjBL with Inclusion in Long Jump (Lusiantri & Mashud, 2023)	This study aims to examine and address the increasing complexity of challenges in the world by preparing students for education.	Integration of the Project-Based Learning (PjBL) model with inclusive teaching methods in long jump learning.	The results of the study indicate that the integration of the Project-Based Learning (PjBL) learning method with the Inclusive learning model greatly helps students in understanding long jump equipment.
Application of PjBL Model in Volleyball Underhand Passing (Raaiyatini & Arifin, 2023)	This article discusses the application of the Project Based Learning (PJBL) model in teaching volleyball underhand passing skills.	The project-based learning model is a learning model that can be used to apply existing knowledge, train various thinking skills, attitudes, and concrete skills.	The results of the study indicate that the application of the PJBL model can improve volleyball underhand passing

The impact of innovation by teachers is an increase in the effectiveness of learning, student learning motivation, and children's motor development in Physical Education subjects (Saputra et al., 2024). In innovating, teachers need to pay attention to students' needs and the principles in planning learning (Mahardika, 2018).

Table 3 shows the categories of innovation created by teachers. Innovation in physical education learning plays an important role in the context of modern education. The application of varied and non-monotonous methods, such as the use of modified games, technology integration, or project-based approaches, are effective in increasing students' interest and motivation to learn. More than just

developing motor skills, innovation also encourages students' mastery of cognitive, psychomotor and affective skills.

Table 3. Categories of innovation

No	Title	Core	Innovation Category
1	Basic Movement Improvement Through Kasti Games (Al-fathi et al., 2024)	The use of rounders game showed an increase in the average cognitive, affective, and psychomotor scores of students in basic movements.	Learning Methods
2	Development of Archery Flexibility Training Model (Susanto et al., 2024)	Developing a pocket book of flexibility models for beginners in archery which is considered very suitable for use as training material.	Media
3	Utilization of Blended Learning in Basketball (Margiyani, 2021)	The application of blended learning has succeeded in improving students' basic basketball movement skills during the Covid-19 pandemic.	Learning Models
4	Increasing Motivation to Learn Physical Fitness with Circuit Training (Soemaryoto, 2022)	The circuit training model assisted by learning videos is effective in increasing students' learning motivation in physical fitness equipment.	Learning Methods
5	PJOK Learning Based on Blended Learning in Junior High School (Victoria et al., 2021)	Blended learning-based learning offers advantages for teachers and students in physical education and sports.	Learning Models
6	Innovative Learning Practices of Leading Teachers (Novita, 2022)	The application of a blended learning model contributes to improving students' literacy skills at SDN Inpres Tenga.	Learning Models
7	Implementation of Think-Pair-Share Model in PJOK (Susila, 2022)	The Think-Pair-Share type cooperative learning model improves students' learning achievement in physical education subjects.	Learning Models
8	Traditional Egrang Game in Elementary School PJOK (Sungkari et al., 2024)	The implementation of the traditional game in physical education learning for Grade 1 Elementary Schools shows that students' stilt skill levels are in the "Good" category.	Learning Methods
9	Utilization of Audio Visual in Basketball (Hakim & Basuki, 2023)	The use of audiovisual media is very effective in improving students' basketball shooting skills and learning outcomes.	Learning Media
10	Integration of PjBL with Inclusive Teaching Style in Volleyball (Ardinnata & Mashud, 2023)	The integration of project-based learning and inclusive teaching can help students develop volleyball skills independently.	Learning Models
11	Effectiveness of Peer Teaching in PJOK (Dwi Silviyani et al., 2023)	The peer-teaching learning model is effective in improving the physical education learning process.	Learning Methods
12	Integration of PjBL with Inclusion in Long	The integration of the Project-Based Learning (PjBL) model with the Inclusive learning model greatly helps	Learning Models

No	Title	Core	Innovation Category
	Jump (Lusiantri & Mashud, 2023)	students understand the long jump material.	
13	Application of PjBL Model in Volleyball Underhand Passing (Raaiyatini & Arifin, 2023)	The application of the Project Based Learning (PjBL) model can improve volleyball underhand passing skills.	Learning Models

Teachers' digital skills are needed and integrated in the selection of educational technology with the learning process. Teacher readiness can be seen from the use of technology and teacher innovation (Almusawi & Durugbo, 2024). By adapting to technological advances and adopting a more interactive and student-centered learning approach, innovation helps achieve Physical Education learning goals optimally, can overcome resource limitations, and instill awareness of the importance of health and fitness. Innovation in physical education not only makes learning more interesting, but also more relevant and able to equip students with a variety of essential competencies. High-quality physical education not only creates students who are physically fit, but also forms individuals who are more mentally and emotionally prepared to achieve optimal performance in all areas of their lives.

The use of learning materials is very important in the learning process. Teachers can communicate with knowledge more effectively by using the right media. Many teachers still use uninteresting materials, which can have a negative impact on students' learning motivation. Teacher creativity in providing learning media affects student motivation (Khastini et al., 2022). By choosing the right media, teachers can communicate knowledge much more effectively than conventional lecture methods. Learning media helps visualize abstract concepts, making the material easier for students to understand and remember. Media can also increase interest and motivation in learning, creating a more interactive and interesting learning experience. Strategic use of the media allows learning objectives to be achieved more optimally, ensuring a comprehensive and meaningful transfer of knowledge for each student.

The use of outdoor games in elementary schools and sports games at the secondary level is very necessary for the development of students' motor skills. This is an effort so that lessons are not monotonous and can foster students' joy at participating in learning (Polevoy et al., 2024). Learning Physical Education directs students to do various tasks, games, and exercises that improve physical fitness and health. The activities need to be packaged in a fun way to attract attention and increase student motivation.

The use of digital platforms in learning can increase active participation and strengthen students' motor skills and support their comprehensive understanding of the material (Da'i & Apriyanto, 2025). The use of applications in physical education learning can also answer specific needs in assessing the learning process (Kurniawan et al., 2023). The use of applications in learning Physical Education, Sports, and Health offers various advantages. Applications can provide clearer and more interactive visualization of movements and techniques, allowing students to understand the material better than relying solely on verbal instructions from teachers. Applications are often equipped with communicative features and systematic instant feedback, which motivate students to practice and improve their skills independently. The availability of

materials that can be used anytime and anywhere via mobile devices also increases the accessibility and flexibility of learning, accommodating different learning styles and allowing students to repeat difficult materials. In addition, applications can make learning Physical Education more interesting and fun through gamification or challenge elements, thereby increasing students' participation and interest in physical activity.

Creative thinking plays an important role in physical education, which affects students and teachers. The use of the PjBL method can be one way to improve students' creativity in completing projects assigned by teachers (Dupri et al., 2024). The integration of multimedia technology has a positive impact on the development of creative thinking among physical education teachers. This can be a trigger for teachers to use technology in the learning process (Xing & Qi, 2023). Multimedia is a powerful tool for expression and experimentation. It empowers individuals to transform abstract ideas into tangible forms. In project creation, the process demands problem-solving and creativity.

CONCLUSION

Innovation in physical education learning plays an important role in the context of modern education. Innovations made by teachers include innovations in learning media, learning models and methods. Innovation is carried out to improve student learning outcomes in the cognitive, affective and psychomotor domains and to increase student learning motivation. The learning environment designed by the teacher will affect the learning process and student learning outcomes.

Teachers' digital skills are needed and integrated in the selection of educational technology with the learning process. The use of learning materials is very important in the learning process. Teachers can communicate with knowledge more effectively by using the right media. Suggestions for teachers based on the results of this study are that teachers should innovate in physical education learning activities not only to improve learning outcomes, but also to provide memorable learning experiences at every meeting in class.

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