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Development of a Basic Sepak Sila Training Model in Sepak Takraw for Fifth-Grade Elementary Students

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Abstract

Sepak sila, as the most dominant technique in sepak takraw, requires a training model tailored to player characteristics. Therefore, it is essential to develop a training model that meets these needs. This study aims to describe the feasibility, practicality, and effectiveness of the sepak sila basic technique training model in sepak takraw for fifth-grade elementary school students. The research method used is Research and Development (R&D) with the ADDIE development model. The study's subjects were fifth-grade students from SDN Taipa, with trials involving one teacher and 28 students. The results indicate that the development of the sepak sila basic technique training model in sepak takraw is feasible, with a validity score of 91.27% in the "very valid" category. This training model is also practical, scoring 94.44% in the "very practical" category. Additionally, this training model effectively improves fifth-grade students' sepak sila skills, with a Cohen's D effect size value of 7.196 in the "very large effect" category.

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INTRODUCTION

Sports are recognized as one of the essential needs of human life, integrated into daily activities for purposes such as health, recreation, education, achievement, culture, and livelihood. Moreover, sports have gained popularity across all societal layers, encompassing both men and women, from children to the elderly. This phenomenon occurs because sports play a significant role in shaping individual character (Kogoya et al., 2023; Muhtar et al., 2020). Through systematic sports development, they can become a crucial factor in nation-building while offering physical and mental health benefits. Among various types of sports, sepak takraw stands out as one that can be utilized as a medium to achieve excellence (Neil-Sztramko et al., 2021; Syam, 2022).

At present, sepak takraw has become highly popular among the public, particularly after the live broadcasts during the 2018 Asian Games held in Jakarta-Palembang, where Indonesia won a gold medal. Consequently, the sport has become familiar to people in urban and rural areas, regardless of age or gender (Hanif et al., 2022). Initially, sepak takraw served as a form of entertainment, exercise, and recreation. However, as the sport evolved and competitive events were organized, it became not only a source of enjoyment but also a means to achieve accomplishments, bringing pride to individuals, clubs, regions, and even the nation in local, national, and international championships (Hanif et al., 2015).

Sepak takraw, a traditional sport, has developed into a competitive game for achieving excellence. The essence of the game lies in kicking a synthetic fiber ball to prevent it from falling into one's own court (Syafii et al., 2022). The objective is to kick the ball across the net using various kicking techniques until it lands in the opponent's court or the opponent fails to return it (Hanif et al., 2015). The game is played between two teams, with each team consisting of three players separated by a net. These players occupy different positions: the player on the right is known as the "right apit," the middle player is the "tekong," and the player on the left is the "left apit" (Helmi et al., 2024).

Each player is assigned specific roles. The tekong, positioned in the middle, is responsible for initiating play by performing a serve into the opponent's court, which acts as the first attack. Meanwhile, the right apit typically serves as the killer or spiker, and the left apit functions as the feeder or setter (Ramadhan et al., 2024). To play sepak takraw effectively, players must possess and master essential skills required in the game. These skills are categorized into individual skills and match-play skills. Individual skills include various basic techniques such as kicking (sepak sila, sepak kura, sepak badek, sepak tapak, and cross-kicks), thigh control (memaha), chest control (mendada), shoulder control (membahu), and heading the ball. Match-play skills, on the other hand, include serving, receiving the first ball, juggling, passing, smashing, and blocking (Daduk et al., 2021; Gani, 2018).

Therefore, technique is considered a fundamental skill possessed by individuals to determine their success in playing sepak takraw. Mastery of basic technical skills is essential for actual matches, enabling players to deliver an impressive and high-quality performance. To become a proficient sepak takraw player, basic techniques must be thoroughly mastered. Once these foundational techniques are well-acquired, performance improvements and quality gameplay can be achieved.

To excel and play sepak takraw professionally, mastering the basic techniques of the game is essential. Basic techniques in sepak takraw are regarded as critical elements in the sport. Without proper mastery of these techniques, the game cannot be played perfectly (Basyiruddin et al., 2024). Basic techniques in sepak takraw include kicking with various parts of the foot (sepak sila, sepak kura, sepak cungkil, sepak tapak, and sepak simpuh), playing the ball with the head (heading), chest, thighs, and shoulders.

Sepak sila involves kicking the ball using the inner part of the foot. This technique is used to receive, juggle, pass the ball, and defend against opponent attacks (Hanif et al., 2015). As a basic technique, sepak sila must be mastered and practiced diligently. It is highly significant and should be mastered by every sepak takraw player, as it is the dominant movement in the game. It can be said that kicking serves as the core of sepak takraw since the ball is primarily played with the feet, from the start of the game to scoring points. In sepak takraw, the ball is returned to the opponent's court using the feet, head, or body (Natal & Ragang, 2021; Syam, 2022).

The importance of sepak takraw for elementary school children cannot be overlooked. In playing sepak takraw, children not only learn various basic and advanced techniques but also develop coordination, agility, and physical strength. Skills such as sepak sila, sepak kura, and heading the ball enhance their motor abilities while strengthening both lower and upper body muscles. Beyond physical benefits, sepak takraw has a positive impact on children's mental and social development, including teamwork, effective communication, and strategic thinking (Kliziene et al., 2021; Sue et al., 2021).

Given the significant benefits of sepak takraw, it is crucial to develop effective training models specifically tailored for elementary school children. A structured sepak sila training model can provide a systematic approach to teaching basic techniques to children. Well-designed exercises, such as drills without a ball, one-touch exercises, and hanging ball drills, are crafted to teach techniques in an engaging manner that suits the children's skill levels.

The development of a structured training model not only facilitates better learning of techniques but also ensures that training can be adapted to meet the physical and mental developmental needs of children. Through a well-planned training model, children can learn techniques accurately while enjoying the learning process, which in turn helps them remain motivated and enthusiastic during practice (Arias-Estero et al., 2020; Chekhovska et al., 2020).

Additionally, an effective training model can enhance teamwork and communication skills among children. By incorporating pair or group exercises, children are taught to coordinate, pass the ball, and perform blocks effectively, which are crucial in sepak takraw. This also contributes to building self-discipline and perseverance, valuable skills not only in sports but also in daily life (Gaspar et al., 2021; Rengge et al., 2022).

Overall, the development of an effective and enjoyable sepak sila training model is considered a key step in maximizing the potential of elementary school children in sepak takraw. With an appropriate approach, children can improve their technical skills while also gaining additional benefits in character building and social skills.

Based on initial observations conducted in the fifth-grade class Public Elementary school 7 Taipa, particularly regarding sepak sila mastery, it was found that many students faced difficulties in performing sepak sila correctly. This was evidenced by the observation results, which showed that only 5 students (20.83%) had mastered sepak sila well, while 19 students (79.17%) had not achieved adequate mastery. Therefore, based on these observations and interviews between the researcher and the physical education teacher, it was determined that developing variations of sepak sila exercises is necessary to ensure that the learning objectives for sepak takraw can be optimally achieved.

Considering that sepak sila is a dominant and essential movement in the learning process of sepak takraw, this study aims to develop a basic sepak sila technique training model that is valid, practical, and effective in improving students' sepak sila skills.

METHODS

This study was conducted as development research (Development & Research), focusing on product development, product validation, practicality testing, and effectiveness testing of the product usage (Sugiyono, 2019). The ADDIE model was employed as the development framework in this research. The ADDIE model provides a clear and systematic approach to designing and developing learning programs, the ADDIE model is systematic, the ADDIE model encourages us to understand the audience, learning objectives, and existing needs, which helps in designing more relevant and effective solutions. The ADDIE model makes it easier to manage instructional design projects, because learning and development are carried out in stages.

The ADDIE model aims to design and develop effective learning by ensuring that each element of learning (materials, methods, and media) is in accordance with the needs of learners. By using the ADDIE model, learning developers have a clear and structured guide that helps them manage each stage of learning design, from problem analysis to evaluation of results. The ADDIE model is to identify and understand the needs of learners, whether in terms of basic knowledge, skills, or learning styles. Through careful analysis, learning designs can be adjusted to meet these

needs, so that learning is more relevant and can improve results. The ADDIE model helps learning project managers plan, manage, and evaluate all aspects of instructional development.

Procedures

The initial phase involved analysis, during which the users' needs and the content were analyzed to inform the development of the training model. The second phase was the design phase, in which the training model was prepared, and the product, in the form of a learning module, was designed using Canva. The subsequent phase was development, where the product underwent validation by sepak takraw experts, media experts, and professional teachers.

The fourth phase was implementation. In this phase, the product was applied to small and large groups, during which practicality and effectiveness tests were carried out. The effectiveness test was conducted using a one-group pretest-posttest experimental design to assess passing skills. The final phase was evaluation, where formative evaluation was performed. This involved analyzing the results of students' responses through questionnaires.

Sampling Procedures

This study was conducted at Public Elementary school Taipa, Palu City. The research sample was drawn from the entire population of fifth-grade students at Public Elementary school Taipa, comprising 28 students, including 12 boys and 16 girls, with an average age of 11 years.

Materials and Apparatus

The data for this study were collected using questionnaires (expert validation questionnaires and student response questionnaires), interview guidelines for students and teachers, as well as sepak sila skill tests.

Design or Data Analysis

The data obtained were analyzed using feasibility, practicality, and effectiveness analysis techniques. Feasibility analysis was conducted by calculating the assessments from expert validators, and the results were interpreted based on the feasibility categories presented in Table 1. Practicality analysis was conducted by calculating the assessments from observers, and the results were interpreted based on the practicality categories shown in Table 1.

The effectiveness analysis of students' passing skills was conducted by testing the effectiveness of product implementation using difference tests and Effect Size data analysis. The obtained Effect Size values were then interpreted using Cohen's criteria, as shown in Table 1.

Table 1. Interpretation Score

Type Of Analysis	Score	Category
Validity	85 – 100 %	Very Valid
	75 – 85 %	Valid

	65 – 75 %	Quite Valid
	0 – 65 %	Not Valid
Practicality	81 – 100 %	Very Practical
	61 – 80 %	Practical
	41 – 60 %	Quite Practical
	21 – 40 %	Not Practical
Effectiveness	> 0,80	Very Large Effect
	0,5 – 0,80	Large Effect
	0,20 – 0,50	Medium Effect
	0 – 0,20	Small Effect

RESULT

The results are presented in three main sections: product feasibility, practicality of product use, and product effectiveness in improving students' sepak takraw skills. The product feasibility assessment began with the analysis, design, and development phases. From the analysis, it was found that (1) PJOK (Physical Education) teachers had not yet identified appropriate media for delivering PJOK materials; (2) teachers experienced difficulties in finding suitable training models for PJOK learning; (3) teachers encountered challenges in designing assessment tools; (4) there was a lack of adequate facilities and infrastructure for PJOK in the school; and (5) students struggled to understand the learning material explained by the teacher.

The information obtained was then analyzed to address these issues in fifth-grade PJOK learning. The identified solutions were as follows: (1) using learning media that are easier for both teachers and students to understand; (2) employing instruments to measure students' skills; and (3) utilizing readily available sports props for teachers and students.

The results of the analysis served as the foundation for designing the product. The initial draft of the sepak sila basic training model consisted of three main sections: the introductory section, the core section, and the concluding section. The introductory section included the cover page, preface, table of contents, and general information about sepak sila. The core section comprised nine sepak sila training models: (1) basic flexibility training for the sila position, (2) sepak sila without a ball, (3) sepak sila with a single touch, (4) hanging ball practice using a plastic ball, (5) hanging ball practice using a standard sepak takraw ball, (6) paired practice with a single touch pass, (7) paired practice with three touches and a pass, (8) sepak sila into a hoop with one touch, and (9) sepak sila into a hoop with two touches. The concluding section contained a sepak sila skill assessment rubric and a bibliography.

The next phase, the product development, was followed by a feasibility test conducted by sepak takraw experts, media experts, and teacher experts. The results of the validation by the sepak takraw expert are presented in Table 2, the results of the media expert validation are presented in Table 3, and

the results of the teacher expert validation
are presented in Table 4.

Table 2. The results of the validation by the sepak takraw expert

Assessment Aspects	Percentage	Category
The material presented in this teaching module is relevant and appropriate for the skill level of fifth-grade students.	91,67%	Very Valid
The basic sepak sila techniques taught in this module align with the standards of sepak takraw techniques.		
The illustrations and images used in this module accurately depict the basic sepak sila techniques.		
The instructions and steps provided in this module are clear and easy for fifth-grade students to follow.		
The structure of this teaching module is well-organized, making it easier for students to understand and practice the basic sepak sila techniques.		
This module takes into account safety aspects when performing basic sepak sila techniques.		
The exercises recommended in this module are suitable for the physical abilities and skills of fifth-grade students.		
This teaching module provides interactive and engaging activities for fifth-grade students.		
This module is effective in helping students develop their basic sepak sila skills.		
This teaching module supports students to learn and practice independently outside of class hours.		
This module provides clear guidelines for giving feedback and assessing student progress.		

Table 3. The results of the media expert validation are presented

Assessment Aspects	Percentage (%)	Category
Design Appearance	91,67	Very Valid
Ease of Use	93,75	Very Valid
Consistency	100	Very Valid
Graphics	85,71	Very Valid
Usability	87,50	Very Valid

Table 4. The results of the teacher expert validation

Assessment Aspects	Percentage (%)	Category
Learning	95	Very Valid
Quality	90	Very Valid
Function	90	Very Valid
Design Appearance	95	Very Valid

The table above is the result of validation by experts which describes the level of quality of the model developed. The practicality of the product was assessed based on feedback from the teacher during the learning process using the developed sepak sila training model. The results of the practicality assessment

of the teaching materials are presented in Table 5.

Table 5. The results of the practicality

Aspects	Percentage (%)	Category
Design Appearance	91,67	Very Practical
Implementation	97,22	Very Practical
Impact	94,44	Very Practical

Table 6. The results of the effectiveness

Description	Score
Sample	28
Pretest Score Mean	53,62
Posttest Score Mean	65,85
Cohen's D	**7,196**
Interpretation	**very large effect**

The effectiveness of the product was evaluated through tests on students' sepak sila skills during the learning process with the developed sepak sila training model. The results of the students' sepak sila skills can be seen in Table 6.

Based on Table 6, it shows that the average score for the Cohen's D effect size is 7.196, which falls into the very large effect category (d > 0.80). Based on these results, it can be concluded that students' sepak sila skills experienced an "improvement" after using the training model with the developed product.

DISCUSSION

This study aimed to produce a product in the form of a basic sepak sila training model for PJOK lessons that is valid, practical, and effective in improving students' sepak sila skills, scientific process skills, and collaborative skills. In the development of the product, the training model was structured based on the principles of interactive learning media, which include text, images, animations, and other interactive elements to enhance students' understanding and engagement (Natal & Ragang, 2021).

The developed basic sepak sila training model, based on the ADDIE development model, was deemed suitable for use after meeting validity requirements. This aligns with Syam (2022), who stated that validation of the developed training model is necessary to assess whether it is appropriate for use in teaching or still contains errors. According to Muhyi et al., (2021), validation aims to assess the feasibility of a product based on expert opinions, ensuring that the product is suitable for use in teaching. The validity of the developed training model is measured by the results of the three expert validators, focusing on didactic, construct, and technical requirements.

From the validation of these three criteria, the final validation score was 91.27%, categorizing the product as highly valid for use in teaching. This result is consistent with Helmi et al., (2024), who stated that the validation of a product by three experts showed that the developed product is highly suitable for use in the learning process. Although there were aspects of the model that did not receive perfect scores from all three validators, the overall evaluation of the basic sepak sila training model was positive, making the product very valid for use in teaching. The validity of this

product is attributed to the fact that it met all aspects of the didactic evaluation, including media format and language, the construct, which includes the content of the training model, and the technical aspects, which involve the design of the training model.

These three aspects of product feasibility are interconnected and mutually supportive to ensure the success of the validation of the developed basic sepak sila training model. Although the validation results did not reach 100%, the obtained results already met the criteria for high feasibility, with some suggestions from the experts (Sue et al., 2021). Since the validation of the three criteria for product feasibility was deemed highly valid, the validity of the basic sepak sila training model developed using the ADDIE model was achieved.

Another criterion that must be met for the basic sepak sila training model to be considered suitable is the practicality of the developed product. The practicality of the basic sepak sila training model was measured through the analysis of data from student and teacher response questionnaires during the trial phase. This statement aligns with Daduk et al., (2021), who stated that this trial was conducted to assess the practicality of the developed product. Similarly, Rengge et al., (2022) stated that the analysis of practicality in the training model for teaching was based on assessments from both teachers and students.

The trial was conducted with 28 students to assess the practicality of the developed basic sepak sila training model. The student and teacher response questionnaires each consisted of 13 items for the teacher response and 20 items for the student response, which addressed aspects such as design, material presentation, ease of understanding, and the language used in the training model. The evaluation used a Likert scale, with response categories scored as 4 (very good), 3 (good), 2 (fair), and 1 (very poor). This is supported by the research of Natal & Ragang (2021), which states that trials are conducted to determine the practicality of the developed product by collecting questionnaire results and feedback from students. The aspects evaluated in this trial included the media display of the training model, the implementation of the lessons, and the impact on learning.

The results of the analysis by the observer showed a score of 91.67%, categorizing the product as highly practical, while the average score of student responses was 85.18%, also falling in the highly practical category. This indicates that the developed basic sepak sila training model has an attractive design and is easy to practice. The material presentation is not boring, which helps students stay motivated during the sepak takraw practice. Additionally, the language used is clear and easy to understand, making the material more accessible to students.

The effectiveness of the basic sepak sila training model was evaluated by analyzing the improvement in students' sepak sila skills. The results showed an increase in the average skill score from 53.62 to 65.85 before and after using the developed training model. This improvement indicates that the developed training model is effective, with a large

effect size of d = 7.196, indicating a very large effect on students' skill improvement.

The increase in basic sepak sila skills demonstrates that the developed training model, with its varied exercises, contributes to improved sepak sila skills. The training model enhances learning because it provides students with the opportunity to identify their weaknesses and offers them the chance to correct them. This is evident from the inclusion of stretching exercises for the sitting sila position as an introductory movement to help students practice the sila posture. Additionally, the paired exercises foster peer support during practice, allowing students to identify and correct each other's weaknesses. This collaborative approach enables students to improve their techniques effectively.

In the training process, it is important to tailor the program to the physical, psychological, and sports-specific characteristics of each student. Through paired training, a supportive and beneficial environment is created for both parties, facilitating skill improvement (Sin, 2020). Furthermore, the relationship between training partners helps them understand each other's weaknesses, enabling them to work together in efforts to improve their abilities. This method also contributes to increased sensitivity and rhythm during practice, as the encouragement from a partner can serve as a positive stimulus supporting overall skill development (Gunawan & Fardi, 2020; Muhtar et al., 2020).

The results of this study indicate that the training program implemented for students had a positive impact on improving basic sepak takraw skills, particularly in the sepak sila technique. Prior to the implementation of the developed training model, the lack of variation in the sepak takraw game hindered the development of the students' playing skills. This was reflected in the initial observation results, where the basic skills of the sepak sila technique were still considered low.

This study suggests that varying the training program positively affects the improvement of students' skills in physical education (PJOK) and sepak takraw coaching. Paired training not only allows students to provide feedback to one another in identifying weaknesses, but it also fosters the development of social skills, such as cooperation and communication. This approach can be applied in PJOK classes by designing more varied exercises, thereby maintaining student motivation and accelerating the mastery of basic skills. Additionally, coaches play a role as facilitators in adapting the training program to meet the students' needs, creating a positive training environment, and encouraging gradual skill development (Aji et al., 2020; Syam, 2022). Therefore, integrating paired training methods and dynamic training programs can significantly contribute to the improvement of both technical and social skills in sports activities, particularly in sepak takraw.

Although paired training and a varied training program have proven effective in enhancing students' skills, there are several limitations that need to be addressed. First, the success of this

method heavily depends on the students' ability to cooperate with their training partners, which can be influenced by factors such as differences in character or imbalanced skill levels, meaning not all training pairs may provide optimal contributions. Second, coaches or teachers must invest more time in designing varied training programs and tailoring them to meet individual needs, which can be challenging in situations with limited time or resources. Third, student motivation is also a crucial factor; students who are less enthusiastic about training with a partner may not fully benefit from this method. These limitations should be considered when implementing training programs to ensure that the approach is optimized according to the conditions on the ground.

CONCLUSION

The developed basic technique training model for the sepak sila in sepak takraw for fifth-grade students is deemed suitable for use in learning, with a validity score of 91.27%, categorized as "very valid." The model is also considered practical for use in teaching, with a practicality score of 94.44%, categorized as "very practical." Furthermore, the basic technique training model is effective in improving sepak sila skills, as indicated by the effect size test, with a Cohen's d value of 7.196, falling under the category of "very large effect."

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