

Development Of Pencak Silat Learning Model Based On Game Modification To Improve Gross Motor Ability Of Elementary School Children Phase C In Malang City

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ABSTRACT

Keywords:

pencak silat,
educational games,
children's gross motor
skills, elementary
school, learning models

This study uses a descriptive model that aims to develop an effective, safe, and interesting game-based pencak silat learning model to improve gross motor skills of elementary school children. The method used is a simplified Borg and Gall research and development (R&D) model. The subjects of the study involved fifth grade students from 3 elementary schools in Malang City. The product developed is a module with 11 types of games, namely Silat Arah Ajaib, Squid Game Pencak Silat, Elak Tangkap, Ikuti Gerakanku, Elak Estafet, Silat Ninja, Engklek Ceria, Silat Jump Rope, Guardian of the Secret Gate, Secret Code of Silat, and Tembak Menara. Product validation was carried out by 3 experts, material experts who gave a 100% assessment for clarity, accuracy, suitability, ease, and completeness, but only 75% for attractiveness, so it is recommended to increase the attractiveness of the material. Media experts gave a score of 83% for clarity, 100% for accuracy, ease, and attractiveness, 92% for suitability, and 88% for completeness, with a note that there needs to be improvement in the clarity and completeness of the media. Meanwhile, practitioner experts gave 100% for clarity, accuracy, suitability, ease, and completeness, and 88% for attractiveness, indicating that the module is very feasible to use with slight improvements in the attractiveness aspect. Material, media, and practitioner experts showed an average score above 83% in all aspects. Small and large group trials produced an average student response score above 97% for the indicators of clarity, suitability, accuracy, ease, and attractiveness. The results show that this model is valid and feasible to be applied in PJOK learning, and should be further applied in order to effectively improve students' gross motor skills. In addition, this model introduces pencak silat in a fun, contextual way, and is full of character values such as sportsmanship, cooperation, and courage.

INTRODUCTION

Physical education is an integral component in the national education system that plays an important role in the formation of a complete Indonesian person, especially in the development of gross motor skills of elementary school children (Iyakrus, 2018 ; Gallahue & Ozmun, 2016) . At the end of phase C, namely for students in grades 5 and 6, they can demonstrate the ability to practice modifications of various basic movement pattern activities and movement skills, based on the application of correct movement concepts and principles and healthy lifestyle behavior patterns, demonstrate consistent personal and social responsibility behavior, and believe in the values of physical activity. One form of this ability is practicing modifications of various basic movement activities (locomotor and non-locomotor) and movement skills to form basic martial arts movements.

Pencak silat is not only a martial art, but also plays a role in the development of children's gross motor skills through basic movements such as kicks, blocks, and steps that train large muscles. In addition to improving coordination, balance, and physical strength, pencak silat also instills character values such as discipline, courage, resilience,

and togetherness from an early age (Ediyono, 2019; Eka, 2022 ; Siregar, 2020; Asiddiqi, 2023; Prasetyo & Prayoga, 2021) . Data from the Ministry of Education and Culture (2023) only 30% of elementary schools in Indonesia include pencak silat in the physical education curriculum (Kemendikbud, 2023). This data is supported by a questionnaire filled out by PJOK teachers in Malang City, assessing that pencak silat is beneficial for gross motor skills, but some movements are difficult for students to master. Challenges such as differences in skills, limited facilities, and the risk of misuse make some teachers not teach it. Meanwhile, teachers who teach pencak silat only use visual learning methods, game-based learning, and demonstrations, but still suggest modifications and more interesting approaches.

Previous studies have shown that the game-based learning approach is effective in improving students' motor skills, motivation, and physical activity compared to conventional methods. However, there has been no research that specifically develops a game-based pencak silat learning model for elementary school students (Nugraha, R. 2017; Reswari. 2022; Dos Santos & Hudain (2020) . Strengthened by the teaching modules available at the Ministry of Education and Culture, which are still limited to modifying basic step movement patterns, while the renewal of module development by researchers is more varied and fun. Therefore, the development of this model is important because it not only improves gross motor skills, but also introduces pencak silat culture from an early age, strengthens national identity, and develops interesting learning that is in line with child development.

RESEARCH METHOD

This study uses a descriptive model that aims to describe the current conditions of pencak silat learning in elementary schools, examine the challenges faced by teachers in implementing learning, and determine students' needs to develop learning models that are suitable for the character of elementary school age Phase C. This study is a research and development (R&D) that adapts the Borg and Gall model, which is simplified into seven stages: needs analysis, planning, initial product development, small group trials, product revision, large group trials, and preparation of the final product. The population in this study were fifth grade elementary school students in Malang City. The sample was selected based on school readiness and the active involvement of PJOK teachers in the needs analysis. Product trials were conducted to assess the effectiveness, efficiency, and benefits of the developed learning model. The trial stages include expert evaluation by three validators, namely expert learning practitioners, game experts, and media experts, who provide suggestions for product improvement. Small group trials were conducted at SDN Bunulrejo 1 Malang City with 23 students, while large-scale trials were conducted at SDN Arjowinangun 2 with 28 students, SD Bahrul Maghfiroh 18 students, and SDN Bunulrejo 1 22 students. The data collected were qualitative data (from observations and interviews) and quantitative data (from the results of group trials). Data collection instruments included needs analysis through questionnaires to PJOK teachers, focus group discussions (FGD) with experts, and questionnaires for students. The data analysis technique used quantitative descriptive statistics with a Likert scale to measure respondents' attitudes, perceptions, and responses to. Quantitative analysis was carried

out using percentage techniques to determine the level of validity based on scores given by experts and students on the other hand qualitative data was analyzed through the stages of data presentation to drawing conclusions.

RESULTS AND DISCUSSION

In the Results section, summarize the collected data and the analysis performed on those data relevant to the discourse that is to follow. Report the data in sufficient detail to justify your conclusions. Mention all relevant results, including those that run counter to expectation; be sure to include small effect sizes (or statistically nonsignificant findings) when theory predicts large (or statistically significant) ones. Do not hide uncomfortable results by omission. Do not include individual scores or raw data with the exception, for example, of single-case designs or illustrative examples. In the spirit of data sharing (encouraged by APA and other professional associations and sometimes required by funding agencies), raw data, including study characteristics and individual effect sizes used in a meta-analysis, can be made available on supplemental online archives. The development of this game-based pencak silat learning model resulted in 12 types of games specifically designed to improve gross motor skills, basic pencak silat skills, and character values in elementary school students. The games are:

Table 1. Results of Game- Based Pencak Silat Module Products

No	Game Name	Activity Description	Activity Objectives
1.	Magic Direction Martial Arts	This game invites students to understand and practice the eight-way step pattern in pencak silat through group ball throwing and catching activities. While following instructions from the leader in the middle, participants practice coordination, concentration, and horse stance skills in an active and fun learning atmosphere.	<p>a) Demonstrate gross motor coordination through throwing and catching movements of the ball.</p> <p>b) Practicing the eight corner step pattern in pencak silat.</p> <p>c) Using the pencak silat stance correctly in moving activities.</p> <p>d) Improve concentration, coordination and teamwork skills in groups.</p>
2.	Squid Game Pencak Silat	Adapting the popular concept of "green-red light", this game challenges students to move with a	<p>a) Practice correct walking and stepping techniques.</p> <p>b) Train and apply the movement</p>

No	Game Name	Activity Description	Activity Objectives
		silat step pattern when allowed, then freeze immediately in a stance when the instruction stops. Focus, discipline, and the ability to read commands are thoroughly trained while still playing in a pencak silat nuance.	patterns and steps in pencak silat. c) Improves balance, coordination and body control. d) Improve concentration, patience, and discipline in following instructions.
3.	Avoid Capture	This simple yet effective exercise trains the basic techniques of pencak silat evasion while responding to balls thrown from various directions. The student in the middle must avoid the ball with the right silat technique, improving reaction, hand-eye coordination, and agility.	a) Respond quickly to movements through dodging exercises against thrown balls. b) Practicing basic dodging techniques in pencak silat with proper movements. c) Improve coordination between eyes, hands and body when avoiding the ball.
4.	Follow My Moves	Through the game of imitating the movements of teachers or friends simultaneously, students are invited to practice various forms of basic pencak silat movements such as jumps and stances. Group cohesion, agility, and focus are the main keys in this activity.	a) Practice jumping or skipping movements with the right technique. b) Improve body balance and agility in movement. c) Develop the ability to imitate movements precisely and simultaneously. d) Demonstrate cooperation and cohesiveness in groups.
5.	Avoid Relay	This unique relay game combines dodging/avoiding with the challenge of navigating a zigzag path	a) Practicing basic evasion techniques in pencak silat in a coordinated manner.

No	Game Name	Activity Description	Activity Objectives
		while carrying a ball. It fosters teamwork, agility, and dodging skills in a positive, competitive atmosphere.	b) Improves agility and accuracy in movement when walking or moving through obstacles. c) Demonstrate coordination and teamwork in completing the game. d) Increase a sense of responsibility, togetherness, and a healthy competitive spirit
6.	Ninja Martial Arts	Students act as targets who must avoid balls from various directions using blocking techniques and silat steps. By only being allowed to move in silat patterns, they learn to control their bodies, speed up reactions, and apply self-defense techniques in real game situations.	a) Using blocking techniques and pencak silat stances to avoid attacks. b) Improves agility and body coordination when moving in confined spaces. c) Practice throwing skills in a focused and responsible manner. d) Cultivate sportsmanship, perseverance and the ability to react quickly in game conditions.
7.	Cheerful Hopscotch	Combining the traditional game of hopscotch with the challenges of pencak silat, students practice balance and concentration through one-legged jumps while performing stances, blocks and light kicks in certain challenge boxes.	a) Train balance and agility through jumping and hopping movements. b) Practicing basic steps, horse stances, and light pencak silat techniques in the form of a game. c) Improve gross motor coordination and body control in a fun way.

No	Game Name	Activity Description	Activity Objectives
			d) Fostering self-confidence, sportsmanship, and cooperation in a healthy competitive atmosphere.
8.	Silat Rope	Jump While jumping rope, students are asked to practice pencak silat blocking movements such as outside, inside, above, and below blocks. This game challenges body coordination, movement rhythm, and hones self-defense techniques in a group play atmosphere.	a) Train gross motor skills, especially the ability to jump with good coordination. b) Develop balance, agility and body control through pencak silat jumping and blocking movements. c) Get to know and practice basic blocking techniques in pencak silat in a contextual and enjoyable way. d) Fostering self-confidence, sportsmanship, and teamwork in a game atmosphere.
9.	The Secret Gatekeeper	This modified game of Gobak Sodor combines defensive and attacking strategies with horse-riding and dodging techniques of pencak silat. Students train their reflexes, concentration, and the ability to position their bodies in dynamic and fun movements.	a) Improve agility, reflexes and body coordination through strategic play. b) Mastering the basic techniques of pencak silat in the form of stances and dodges in the context of the game. c) Develop defensive and offensive strategies in dynamic situations. d) Cultivate an attitude of cooperation, discipline, and self-confidence in facing group challenges.

No	Game Name	Activity Description	Activity Objectives
10.	Secret Code of Silat	A chain message game, where students communicate the name of a silat movement until it is demonstrated by the last member. In addition to training memory and communication, this activity introduces basic silat techniques in a fun and collaborative way.	a) Remembering and understanding various basic techniques in pencak silat. b) Improve concentration and memory in receiving and conveying information. c) Practicing pencak silat movements correctly based on the instructions received. d) Develop teamwork, effective communication, and accuracy in the learning process.
11.	Shoot the Tower	With the goal of knocking down and rebuilding towers of objects, students practice throwing, dodging, and moving skills using silat steps. The combination of strategy, speed, and precision of silat techniques makes this game exciting and challenging.	a) Practicing basic pencak silat movements such as horse stances, steps, blocks and dodges in game situations. b) Train agility, coordination and body balance through fun physical activities. c) Improve throwing, dodging and strategic movement skills in teamwork. d) Cultivate values such as sportsmanship, cooperation, responsibility and courage.

With the creation of several games, to determine the level of validity of the game-based pencak silat learning model developed, a validation test was conducted by three experts, namely material experts, media experts, and elementary school learning practitioners. Based on the validation results by three experts, data was obtained that all aspects of the assessment showed "valid" criteria. The results of expert validation can be seen as follows:

A. Subject Matter Expert

Table 1. Results of Expert Validation Test of Game-Based Pencak Silat Module Development Material

Assessment Aspects	Subject Matter Expert Validator			Category
	Results	Total	Presentation	
		Score Criteria		
Clarity	12	12	100%	Valid
Accuracy	12	12	100%	Valid
Compliance	12	12	100%	Valid
Convenience	8	8	100%	Valid
Attraction	6	8	75%	Valid
Completeness	8	8	100%	Valid

Based on table 1 validation results, material experts assessed the game-based pencak silat learning module very well. All aspects such as clarity, accuracy, suitability, ease, and completeness were assessed at 100%, except for the aspect of attractiveness which received a score of 75%. Overall, the module is considered valid, although it is recommended to increase the attractiveness of the material to attract more students' attention.

B. Media Expert

Table 2. Results of Expert Validation Test of Media for Developing Game-Based Pencak Silat Modules

Assessment Aspects	Media Expert Validator			Category
	Results	Total	Presentation	
		Score Criteria		
Clarity	10	12	83%	Valid
Accuracy	12	12	100%	Valid
Compliance	11	12	92%	Valid
Convenience	8	8	100%	Valid
Attraction	8	8	100%	Valid
Completeness	7	8	88%	Valid

Based on table 2, Media experts gave an assessment with a score of 100% on the aspects of accuracy, ease, and attractiveness. Meanwhile, the clarity aspect received a score of 83% and suitability of 92%, and completeness of 88%. In general, the module is declared valid, but there needs to be a little improvement, especially in the aspects of

clarity of information presentation and completeness of media. All aspects received a very high assessment with a valid category.

C. Learning Practitioner Expert

Table 3. Results of the Expert Validation Test of Learning Practitioners for the Development of Game-Based Pencak Silat Modules

Assessment Aspects	Learning Practitioner Expert Validator			Category
	Results	Total Score Criteria	Presentation	
Clarity	12	12	100%	Valid
Accuracy	12	12	100%	Valid
Compliance	12	12	100%	Valid
Convenience	8	8	100%	Valid
Attraction	7	8	88%	Valid
Completeness	8	8	100%	Valid

Based on table 3, Expert practitioners gave an assessment of almost all aspects, with a score of 100% on clarity, accuracy, suitability, ease, and completeness. The aspect of attractiveness received a score of 88%. With these results, the module is declared valid and ready to be used in learning, although strengthening the aspect of attractiveness is still recommended to improve understanding in the implementation of learning.

To assess the effectiveness of the developed learning model, a trial was conducted in two stages, namely small groups and large groups. The results of the trial showed that the developed learning model received a very good response from students. All aspects of clarity, appropriateness, accuracy, ease, and attractiveness scored above 97% and were included in the valid category. The results of student assessments of the five aspects of the product are presented in Table 4.

Table 4. Results of the Group Trial of the Game-Based Pencak Silat Module Development

Assessment Aspects	Group Trial		Category
	Small	Big	
Clarity	97%	98%	Valid
Conformity	97%	98%	Valid
Accuracy	97%	98%	Valid
Convenience	99%	100%	Valid
Attraction	100%	100%	Valid

Based on the results of small and large group trials of the game-based pencak silat module, all aspects of the assessment showed a very high level of validity. The aspects of clarity, appropriateness, and accuracy each obtained a score of 97% in the small group trial and 98% in the large group trial. The ease aspect obtained a score of 99% and

100%, while the interestingness aspect received a perfect score of 100% in both groups. Overall, the aspects were assessed in the Valid category.

To provide a visual representation of the comparison of the results of the group trials, it is presented in the form of a bar chart in Figure 2.

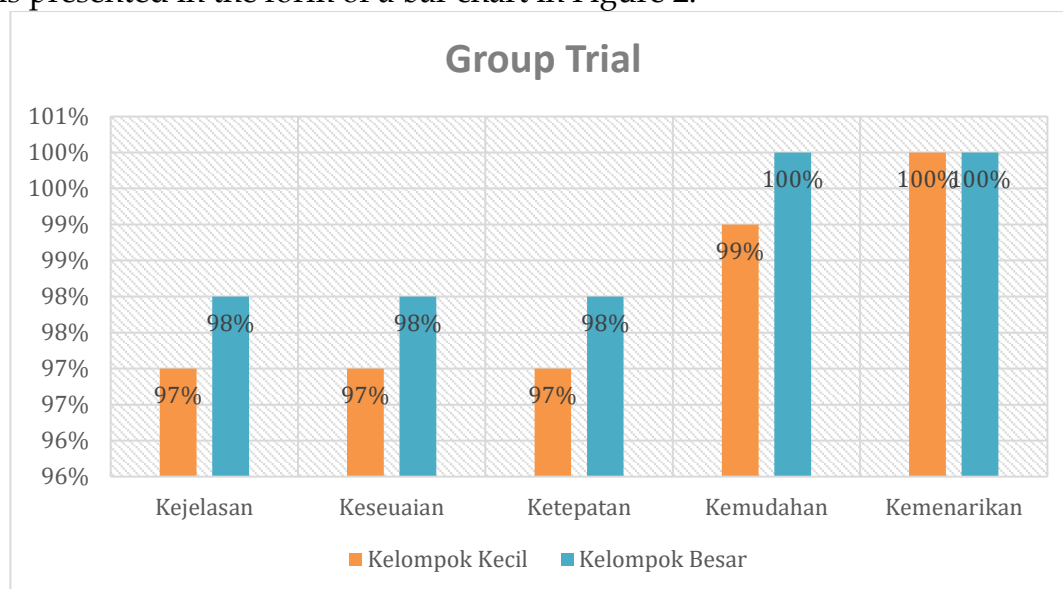


Figure 2. Group Trial Diagram

Discussion

The validation results show that the game-based pencak silat learning model developed is suitable for use in the PJOK learning process in elementary schools. The high scores on the aspects of clarity, accuracy, and suitability indicate that the content of the material is easy to understand and in accordance with the needs of phase C students. This is in line with the theory of Gallahue and Ozmun (2016) which states that gross motor learning in children needs to be supported by a fun approach and in accordance with age development.

The ease and attractiveness aspects which also scored high indicate that this model is able to attract students' interest and is easy to implement by teachers. This is reinforced by the research results of Siregar (2020) and Dos Santos & Hudain (2020) which state that a game-based approach can significantly increase student motivation and participation in physical learning.

This finding also shows that the integration of pencak silat in the form of games can be a solution to the limitations faced by teachers in teaching self-defense materials in elementary schools. This model is not only able to improve gross motor skills, but also instill local character and cultural values that are part of the national education goals. The main strength of this learning model lies in the form of its applicable and contextual products. Through 12 types of pencak silat-based games developed in the module, students are not only invited to move actively, but also enjoy the learning process while instilling character values such as cooperation, courage, and sportsmanship. The limitations of this study lie in the limited scope of the trial area in Malang City and the number of schools involved. However, these findings provide an initial contribution to the development of a more applicable and contextual pencak silat

learning model in elementary schools. To support the implementation of the learning model that has been developed, the author also provides a module product that can be accessed digitally. The module can be downloaded via the following link or by scanning the QR code below:



QR Code Game-Based Pencak Silat Teaching Module

CONCLUSION

This study produced a valid and feasible game-based pencak silat learning model to improve gross motor skills of elementary school students in phase C. This model was declared valid based on the results of expert assessments and the results of small and large group trials, which showed very positive responses in terms of clarity, accuracy, suitability, ease, and attractiveness. The developed model not only makes it easier for teachers to deliver pencak silat material, but is also able to increase students' interest and active involvement in learning. In addition, the game-based approach has proven effective as a means to instill character values and introduce pencak silat culture from an early age. This model is a solution to the challenges of pencak silat learning in elementary schools, making self-defense material more inclusive and easily accepted by students. This study contributes to the development of innovative, fun, and developmentally appropriate PJOK learning models.

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