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# Development of Pencak Silat Learning Model Through Games For 1ST High School Students In Kendal Senior High School

**Riza Efendi[1A-E*], Ipang Setiawan[2B-D]**

[1,2] Universitas Negeri Semarang, Central Java, Indonesia

rizaefendi72@students.unnes.ac.id[1], Ipang_setiawan@mail.unnes.ac.id[2]

**ABSTRAK**

This study aims to produce a product in the form of a pencak silat learning development model through games for 10th-grade high school students in Kendal Regency. The method used is research and development (Research and Development), referring to the Sugiyono model (2017). Data collection techniques were carried out through observation and questionnaires, while data analysis used descriptive percentage techniques to assess the validity and level of product feasibility based on expert assessments. The validation results in a small-scale trial showed a score of 91% from material and development experts, with a very good classification. The evaluation was carried out based on three aspects, namely affective, cognitive, and psychomotor, all of which were met well. A large-scale trial was conducted in three schools in Kendal Regency, with validation results from each physical education expert showing a score of 96% (very good) from SMA Negeri 1 Singorojo, SMA Negeri 1 Boja, and SMA Negeri 1 Limbangan. Overall, this learning model was declared very feasible to use. In addition, students were able to achieve the objectives of pencak silat learning, namely practicing movement skills and evaluating facts, concepts, and procedures in the context of martial arts.

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**AUTHORS' CONTRIBUTION**

A. Conception and design of the study;
B. Acquisition of data;
C. Analysis and interpretation of data;
D. Manuscript preparation;
E. Obtaining funding

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## INTRODUCTION

Physical education is an essential part of the education system, aiming not only to improve students' physical fitness but also to foster character, discipline, cooperation, and responsibility through planned and meaningful physical activity. This is in line with Yuniartik & Hidayah (2017), who argue that physical education is a crucial part of the overall educational process. Furthermore, according to Ipang Setiawan (2022), the goal is to develop physical abilities and skills, support physical growth, enhance intelligence, and shape students' character. According to Natal et al. (2023), physical education is essentially an educational process that uses physical activity to produce comprehensive changes in a person, encompassing physical, mental, and emotional aspects, to improve the overall quality of the individual. The learning process involves physical activity to stimulate holistic, harmonious, and balanced growth and development to achieve holistic human development (Rifald, 2023).

**Riza Efendi[1A-E*], Ipang Setiawan[2B-D]**
nrizaefendi72@students.unnes.ac.id[1]

According to Minister of National Education Regulation Number 22 of 2006, the goal of physical education is to develop skills related to physical activity, aesthetic growth, and social progress (Sudarsinah, 2021). Meanwhile, according to Mustafa (2022), physical education can be defined as an educational process aimed at fostering the growth and development of students, including physical, intellectual, motor skills, and attitudes, through physical activity or body movement. Essentially, physical education and sports aim to develop students' potential in three main aspects: cognitive, affective, and psychomotor (Budi et al., 2019; Alif Nurzaqi, 2015; Rink & Hall, 2008) as cited in Setiawan et al., 2020).

Physical education in schools is expected to be a medium to encourage children to be more physically active. Schools themselves are crucial for stimulating students' physical and mental growth through physical education learning. Schools should not only serve as a place for academic learning, but also as a second space for children to optimally channel their movement needs (Ardiyanto et al., 2021). According to Rahayu (2013: 18) in (Anas Junaedi, 2015), the scope of physical education, sports, and health in high schools in sports activities includes: (1) Athletic activities, (2) Large ball games, (3) Small ball games, (4) Martial arts, (5) Gymnastics, (6) Rhythmic movement activities, (7) Physical fitness development activities, and (8) Water and personal safety activities.

In this context, one of the subjects taught in high school physical education is the martial art of pencak silat, an Indonesian cultural heritage containing elements of art, sport, self-defence, and spirituality.

According to Lucius & Daryanto (2022), pencak silat is an Indonesian cultural heritage that has existed since prehistoric times and has a variety of names and movements. Lubis stated that pencak silat is a comprehensive sport to learn because it encompasses four main, interrelated and inseparable aspects: spirituality, self-defence, sport, and arts and culture, as described by Guntur Sutopo & Misno (2021). The uniqueness of pencak silat lies in its series of moves that encompass various basic techniques such as blocks, punches, kicks, catches, takes, and throws (Kotot Slamet Riyadi, 2003:3) in Maimunah & Aji Putra, 2022). According to Halbatullah, Astra, and Suwiwa (2019, p. 137), pencak silat is generally a self-defence method originally developed to protect oneself from threats that could endanger safety (Model et al., 2022).

In the context of educational sports, pencak silat has been included in the curriculum so that students can learn its history, origins, techniques, and various movements. As an indigenous Indonesian cultural heritage, pencak silat needs to be protected and preserved, one way being through formal education. This is in line with Kriswanto (2015:13), who stated that pencak silat is a martial art inherited from our ancestors and is part of the Indonesian cultural heritage. Therefore, it needs to be continuously maintained, nurtured, and developed. According to Kriswanto (2015:13), pencak silat is a martial art inherited from our ancestors and is part of the Indonesian cultural heritage. Therefore, it needs to be continuously maintained, nurtured, and developed (Arumdhani et al., 2024). Therefore, pencak silat is taught in physical education, with the hope that students will not only understand the techniques and benefits but also internalize the noble values and positive impacts derived from such learning.

**Riza Efendi[1A-E*], Ipang Setiawan[2B-D]**
nrizaefendi72@students.unnes.ac.id[1]

Based on initial observations at several high schools in Kendal Regency, several problems were identified in the implementation of pencak silat instruction. At Singorojo 1 Public High School, learning was not optimal and did not align with the curriculum. At Boja 1 Public High School, teachers' lack of ability to deliver pencak silat material made it difficult for students to understand the lesson. Meanwhile, at Limbangan 1 Public High School, limited equipment and facilities hampered the learning process, resulting in suboptimal learning and inadequate student safety.

These issues highlight the need for innovative efforts to develop relevant, effective, and enjoyable learning models so that pencak silat learning can proceed according to the curriculum while simultaneously increasing student interest and understanding and resolving existing problems. One approach is research and development (R&D). This method aims to produce or refine learning products, including tools, models, media, and systems, based on a continuous process of testing and improvement (Harjanto et al., 2022).

Based on this, the author was inspired to integrate pencak silat learning activities into a game. This research focuses on developing a pencak silat learning model packaged through an engaging game to support the physical education learning process in schools, particularly for 10th-grade high school students in Kendal Regency, as a solution to the various identified obstacles.

The product is designed to present pencak silat material in a fun game format, while maintaining the authenticity of basic pencak silat movements. All the material is neatly organized into four types of games, each containing different content. The basic techniques included in the games include stances, stances, step patterns, punches, kicks, evasion defenses, and blocks.

This research is expected to produce an innovative learning model that not only aligns with the curriculum but also addresses the limitations of teachers, facilities, and students' understanding of pencak silat. This will ensure that optimal physical education instruction, particularly pencak silat, can support the achievement of comprehensive educational goals.

## METHODS

This research is a development model study aimed at producing a product in the form of a pencak silat learning development model packaged through games for 10th-grade high school students. According to Sugiyono (2018:297), the research and development method, also known as "Research and Development," is a research method aimed at producing specific products and testing their effectiveness (Nurmalasari, Akhbar, 2022). In the world of education, products produced through development research are expected to increase educational productivity. These products cover various educational needs, such as teaching methods, learning media, textbooks, modules, and so on (Sugiyono, 2008:407).

The development procedure in this study refers to the model proposed by Sugiyono (2017:409–426), which includes several stages, namely (1) potential and

**Riza Efendi[1A-E*], Ipang Setiawan[2B-D]**
nrizaefendi72@students.unnes.ac.id[1]

problems, (2) data or information collection, (3) product design, (4) design validation, (5) design revision, (6) product trial, (7) product revision, (8) usage trial, (9) product revision, and (10) mass production (Dewi, Nulhakim, 2022).

The trial subjects consisted of: expert evaluation consisting of (1) one expert in pencak silat martial arts material, Muhammad Bakhtiar Subardi, S.Pd, M.Pd and (2) one expert in physical education learning, namely Puput Harunti, S.Pd. In this study, the sampling technique was carried out by selecting one class from each 10th-grade class in each school, namely 10th grade of SMA Negeri 1 Singorojo, 10th grade of SMA Negeri 1 Boja, and 10th grade of SMA Negeri 1 Limbangan, with a total of 36 students in each class.

Data collection was conducted through observation and questionnaires. Observations were used as a tool to directly observe and record various events during the product trial process. In the evaluation process by experts and product trials, researchers used questionnaires as a data collection tool. Two questionnaires were used: (1) a questionnaire for students, and (2) a questionnaire for experts. Each questionnaire covered four assessment categories: (1) SB (Very Good), (2) B (Good), (3) KB (Poor), and (4) SKB (Very Poor). The questionnaires administered to students and experts differed. Expert assessments focused on the quality of the product development in terms of competency, student engagement, learning safety, suitability to the material, comfort, and feasibility of the product development. Meanwhile, the student questionnaire focused on assessments covering several aspects that are the focus of development research, namely cognitive, affective, and psychomotor aspects.

The effectiveness of the analysis was determined through a comparison of numbers or numerical values. Therefore, the qualitative data analysis in this study used descriptive percentage techniques to measure the validity of the products from experts and their level of acceptance of the form of developing a pencak silat learning model through games for 10th-grade high school students, which was obtained through a questionnaire. Meanwhile, data in the form of suggestions and reasons from respondents' answers were analyzed using qualitative techniques. The formula used in processing qualitative data in the form of percentages refers to Muhamad Ali (1987).

## RESULTS AND DISCUSSION

Based on the results of observations conducted by researchers through observations of the Physical Education, Sports, and Health learning process at SMA Negeri 1 Singorojo, SMA Negeri 1 Boja, and SMA Negeri 1 Limbangan, Kendal Regency, several problems were found, namely: (1) learning was not running optimally and was not following the curriculum; (2) low teacher ability in delivering pencak silat material; and (3) limited tools and facilities that hindered the learning process. Based on this needs analysis, researchers plan to create a product in the form of a pencak silat learning development model through games.

After going through the design stage, the initial product was produced in the form of a pencak silat learning development model through games adapted for 10th-grade

**Riza Efendi[1A-E*], Ipang Setiawan[2B-D]**
nrizaefendi72@students.unnes.ac.id[1]

high school students in Kendal Regency. At this stage, the product was first validated by (1) one development material expert from Unnes Lecturer, namely Muhammad Bakhtiar Subardi, S.Pd, M.Pd, (2) and one physical education learning expert from the subject teacher PJOK, namely Puput Harunti, S.Pd. Before the product, a game-based pencak silat learning model, was developed for students, validation was conducted by submitting an initial draft of the product, along with an evaluation sheet and a suggestion section, to experts. The evaluation sheet was compiled in the form of a questionnaire covering several assessment aspects, namely content suitability, presentation suitability, language suitability, and contextual assessment.

Based on the assessment results from material experts before the small-scale trial, the product received a score of 91%, falling into the "very good" category, thus being declared "very suitable for use." A similar assessment was also given by Puput Harunti, S.Pd, a physical education and health education (PJOK) learning expert at SMA Negeri 1 Singorojo, with the same result of 91%, indicating that the product fell into the "very good" category and was suitable for implementation.

A small-scale trial of the developed product was conducted in a 10th-grade class at SMA Negeri 1 Singorojo, involving half the total number of students in that class, on May 5, 2025. The purpose of this trial was to identify potential issues, such as weaknesses and shortcomings, and to evaluate the product's effectiveness when implemented with students. Data obtained from the small-scale trial will be used as a basis for evaluation and improvement before the product is implemented in a large-scale trial. Furthermore, this trial also aims to determine initial responses to the developed product. Data collection was conducted using questionnaires and observation sheets, which included assessments of affective, psychomotor, and cognitive aspects. The results obtained are as follows:

**Table 1.**
Affective aspects of small test data

| Number of students | 18 | | | |
|---|---|---|---|---|
| Indicator | Cooperation | Honesty | Tolerance | Responsibility |
| Number of questions | 3 | 3 | 3 | 3 |
| Number of scores obtained | 45 | 49 | 45 | 44 |
| Average | 2,5 | 2,7 | 2,5 | 2,4 |
| Percentage % | 83,3 | 90,7 | 83,3 | 81,4 |
| Overall average | | 84,6% | | |

Source: Affective test results

**Table 2.**
Psychomotor aspects of small test data

| Number of students | 18 | | | |
|---|---|---|---|---|
| Indicator | 1 | 2 | 3 | 4 |
| Number of questions | 3 | 3 | 3 | 3 |
| Number of scores obtained | 46 | 40 | 42 | 42 |
| Average | 2,55 | 2,2 | 2,3 | 2,3 |
| Percentage % | 85,1 | 74,1 | 77,7 | 77,7 |
| Overall average | | 78,65% | | |

Source: psychomotor test results

**Riza Efendi[1A-E*], Ipang Setiawan[2B-D]**
nrizaefendi72@students.unnes.ac.id[1]

**Table 3.**
Cognitive aspects of small test data

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Number of students | 18 | | | | | | | | | |
| Number of questions | 10 | | | | | | | | | |
| Number of questions | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Total | 15 | 13 | 18 | 18 | 12 | 12 | 14 | 13 | 16 | 11 |
| Percentage % | 83,3 | 72,2 | 100 | 100 | 66,7 | 66,7 | 77,7 | 72,2 | 88,8 | 61,1 |
| Average | 78,87 | | | | | | | | | |

Source: cognitive test results

Product revisions were conducted to improve the quality of the final product and minimize potential errors. Based on input from material experts and physical education experts, the pencak silat learning development model through games needed to be refined to optimise it and be deemed suitable as an alternative physical education learning model for 10th-grade high school students.

Based on the results of the first trial, researchers proceeded to a large-scale trial phase, conducted in three schools before the product was declared suitable for use. The large-scale trial was conducted from May 19, 2025, to May 23, 2025, at three schools: Singorojo 1 State Senior High School, Boja 1 State Senior High School, and Limbangan 1 State Senior High School. The purpose of this trial was to evaluate the effectiveness of the improvements made based on the results of the small-scale trial, while also testing the product's feasibility when implemented in real-world settings. Data collection at this stage was conducted through questionnaires and observations.

Based on the results of the large-scale trial, expert validation assessments of the product prior to the large-scale trial with physical education learning experts at SMA Negeri 1 Singorojo, SMA Negeri 1 Boja, and SMA Negeri 1 Limbangan showed scores of 91%, 99%, and 96%, respectively. All three results fall into the "very good" category, thus declaring the product "very suitable for use."

The results of the large-scale trial on the affective aspect showed that SMA Negeri 1 Singorojo achieved an average score of 82.2%, SMA Negeri 1 Boja achieved an average score of 87.7%, and SMA Negeri 1 Limbangan achieved an average score of 88.3%. Based on these data, all results fall into the "very good" category, thus declaring the product very suitable for use.

The results of a large-scale trial on the psychomotor aspect showed that SMA Negeri 1 Singorojo achieved an average score of 83.3%, SMA Negeri 1 Boja achieved 81.3%, and SMA Negeri 1 Limbangan achieved an average score of 89.3%. Based on these results, all scores fell within the "very good" category, thus declaring the product highly suitable for use.

The results of a large-scale trial on the cognitive aspect showed that SMA Negeri 1 Singorojo achieved an average score of 82.17%, SMA Negeri 1 Boja achieved 80.23%, and SMA Negeri 1 Limbangan achieved an average score of 88.83%. Based on these results, all scores fell within the "very good" category, thus declaring the product highly suitable for use.

**Riza Efendi[1A-E*], Ipang Setiawan[2B-D]**
nrizaefendi72@students.unnes.ac.id[1]

## CONCLUSIONS

The final product of this research is a model for developing pencak silat learning through games designed for 10th-grade high school students. The product underwent two testing phases. A small-scale trial was conducted with 18 students from Singorojo 1 State Senior High School. A large-scale trial was then conducted with a total of 108 students from three schools in Kendal Regency, consisting of 36 students each from Singorojo 1 State Senior High School, Boja 1 State Senior High School, and Limbangan 1 State Senior High School.

The model for developing pencak silat learning through games was implemented on the small-scale trial subjects. Based on validation results from material and development experts, the product achieved a score of 91%, categorized as "very good." Validation by physical education experts also yielded similar results, with a score of 91%, categorized as "very good." Therefore, this learning model was deemed highly suitable for use with 10th-grade high school students and can proceed to the large-scale trial phase.

During the large-scale trial phase, the product for developing pencak silat learning through games was successfully implemented among the research subjects. Based on the analysis of the trial results, validation conducted by three physical education experts from each of the schools where the trial was conducted showed excellent results. The expert from SMA Negeri 1 Singorojo gave a score of 96%, as did experts from SMA Negeri 1 Boja and SMA Negeri 1 Limbangan, who each also gave a score of 96%. Thus, the overall average score from the three schools was 96%, which falls into the "very good" category. Therefore, this development product was deemed highly suitable for use in the pencak silat learning process for 10th-grade high school students in Kendal Regency.

In the small-scale trial at SMA Negeri 1 Singorojo, assessments were conducted based on three aspects: affective, cognitive, and psychomotor. The results of the affective aspect measurement showed an average score of 84.7%, consisting of indicators of cooperation (83.3%), honesty (90.7%), tolerance (83.3%), and responsibility (81.4%). For the cognitive aspect, the average score was 78.7%. Meanwhile, for the psychomotor aspect, the average score across the four indicators reached 78.65%, with Indicator 1 achieving 85.1%, Indicator 2 achieving 74.1%, Indicator 3 achieving 77.7%, and Indicator 4 achieving 77%.

The first large-scale trial phase was conducted at Singorojo 1 Public High School. The test results showed an average score of 82.3% for the affective aspect, with cooperation achieving 81.4%, honesty achieving 87%, tolerance achieving 80.5%, and responsibility achieving 80.5%. Meanwhile, for the cognitive aspect, the average score was 82.2%. For the psychomotor aspect, the average score was 83.3%, with Indicator 1 achieving 85.1%, Indicator 2 achieving 83.3%, Indicator 3 achieving 81.4%, and Indicator 4 achieving 83.3%. Based on these results, all aspects, including affective, cognitive, and psychomotor, were classified as "very good." Thus, the product developed for the pencak silat learning model through games is deemed highly suitable for use.

The second large-scale trial phase was conducted at SMA Negeri 1 Boja. The test results for the affective aspect showed an average score of 81.7%, with indicators for cooperation at 80.5%, honesty at 83.3%, tolerance at 82.4%, and responsibility at 80.5%. The cognitive aspect achieved an average score of 80.23%. Meanwhile, for the psychomotor aspect, the average score was 81.9%, with indicators 1 at 85.1%, 2 at 83.3%, 3 at 81.4%, and 4 at 83.3%. Based on these results, all affective, cognitive, and psychomotor aspects were classified as "very good." Thus, the product developed for the pencak silat learning model through games was deemed highly suitable for use.

The third large-scale trial phase was conducted at SMA Negeri 1 Limbangan. For the affective aspect, the average score was 88.3%, with the following breakdown: cooperation 85.1%, honesty 91.6%, tolerance 85.1%, and responsibility 91.6%. For the cognitive aspect, the average score was 88.83%. Meanwhile, for the psychomotor aspect, the average score was 89.3%, with indicator 1 at 87.1%, indicator 2 at 92.5%, indicator 3 at 87.1%, and indicator 4 at 90.7%. Based on these results, all affective, cognitive, and psychomotor aspects were classified as "very good." Therefore, the pencak silat learning development model through games is deemed highly suitable for use with 10th-grade students at SMA Negeri 1 Limbangan. With success across all assessment aspects, this product has proven effective and suitable for widespread implementation.

In this development, students have been able to achieve the learning objectives, particularly in the pencak silat self-defence material. The learning objectives include the ability to practice movement skills in various martial arts, as well as evaluating facts, concepts, and procedures related to movement skills in martial arts.

## REFERENCES

Anas Junaedi. (2015). View metadata, citation and similar papers at core.ac.uk. 03, 834–842.

Ardiyanto, D., Mustafa, P. S., Indonesia, J. T., Islam, U., Mataram, N., & Barat, N. T. (2021). Upaya Mempromosikan Aktivitas Fisik dan Pendidikan Jasmani via Sosio-Ekologi. 5(2), 169–177.

Arumdhani, U. S., Setiawan, I., Hartono, M., & Billiandri, B. (2024). Indonesian Journal for Physical Education and Sport Pengembangan Media Pembelajaran Pencak Silat Siswa Tunarungu Di Kabupaten Grobogan. 5(2), 657–665.

Dewi, Nulhakim, H. (2022). Jurnal Bidang Pendidikan Dasar Jurnal Bidang Pendidikan Dasar. 6(1), 24–34.

Guntur Sutopo, W., & Misno. (2021). Analisis Kecepatan Tendangan Sabit Pada Pesilat Remaja Perguruan Pencak Silat Tri Guna Sakti Di Kabupaten Kebumen Tahun 2020. JUMORA: Jurnal Moderasi Olahraga, 1(01), 27–34. https://doi.org/10.53863/mor.v1i01.131

Harjanto, A., Rustandi, A., & Caroline, J. A. (2022). Implementasi Model Pengembangan 4D Dalam Mengembangkan Media Pembelajaran Berbasi Online Pada Mata

Pelajaran Pemrograman Web di SMK Negeri 7 Samarinda. 5(2), 1–12.

Ipang Setiawan. (2022). Pengembangan Materi Pembelajaran Bola Basket Pada Pembelajaran PJOK Kelas V Sekolah Dasar. 3(2), 635–641.

Lucius, R. L., & Daryanto, Z. P. (2022). Analisis Pengembangan Pembelajaran Keterampilan Gerak Dasar Tendangan Pencak Silat. Journal Sport Academy, 1(1), 10–16. https://jurnal.jsa.ikippgriptk.ac.id/index.php/jsa/article/view/3%0Ahttps://jurnal.jsa.ikippgriptk.ac.id/index.php/jsa/article/download/3/3

Maimunah, A. P. (2022). Indonesian Journal for Pengembangan Media Pembelajaran Aktivitas Bela Diri Melalui Audio Visual Untuk. 3(1), 264–270.

Model, P., Jatuhan, L., Silat, P., Ekstrakurikuler, D., Khoirul, I., & Setiawan, I. (2022). Indonesian Journal for. 3(2), 461–468.

Mustafa, P. S. (2022). Peran Pendidikan Jasmani untuk Mewujudkan Tujuan Pendidikan Nasional Pinton Setya Mustafa Universitas Islam Negeri Mataram. 8(June), 68–80.

Natal, Y. R., Wani, B., Mau, F. N., & Fole, F. R. (2023). Kata Kunci : Pembelajaran penjas, Permainan Tradisional, Sagu Alu. 2(3), 70–75.

Nurmalasari, Akhbar, S. (2022). Jurnal Riset Pendidikan Dasar. 05(April), 1–8.

Rifald, I. (2023). Kata Kunci: minat belajar, motivasi belajar, hasil belajar Copyright © 2023 Jurnal Pendidikan Jasmani Universitas Tanjungpura (MARATHON) 1. 2, 1–15.

Setiawan, Yudiana, Ugelta, Oktriani, S., & Budi, D. R. (2020). Journal of Teaching Physical Education in Elementary School Hasil Belajar Pendidikan Jasmani dan Olahraga Siswa Sekolah Dasar : Pengaruh Keterampilan Motorik ( Tinggi ) dan Model Pembelajaran ( Kooperatif ). 3(28), 59–65.

Sudarsinah. (2021). Elementa: jurnal pgsd stkip pgri banjarmasin. 1–10. https://doi.org/10.33654/pgsd

Yuniartik, H., & Hidayah, T. (2017). Journal of Physical Education and Sports Evaluasi Pembelajaran Pendidikan Jasmani Olahraga dan Kesehatan di SLB C Se-Kota Yogyakarta Abstrak. 6(2), 148–156.