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TRAINING MODEL OF EVASION TECHNIQUES IN DOUBLE ART CATEGORY OF PENCAK SILAT BASED ON ATTACK MACHINE

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Abstract Pencak silat, as a traditional martial art, has evolved into a modern combat sport that is now featured in various national and even international events. This research has developed 11 training models for evasion techniques in the double category of pencak silat using the Attack Machine and an Instrument Test to measure the speed of evasion techniques, named the Attack Machine Test. This research was conducted using the Research and Development method. The research procedure followed the ADDIE model, which includes Analysis, Design, Development, Implementation, and Evaluation. Data collection involved 30 active students specializing in the art category, particularly doubles, using testing and measurement techniques as the Instrument Test for collecting pretest and posttest data (Attack Machine Test). The data analysis presented includes descriptive quantitative analysis and qualitative analysis. The results of this study show that the average pretest score was 58.3 and the posttest score was 67.5, with standard deviations of 21.104 and 17.555, respectively. In the t-test table for Equality of Means, with a significance level of < 0.05 for the One-Sided p Mean Difference Two-Sided p Std. Error Difference, it indicates the significant improvement in training effectiveness and reaction speed in the double category.

Keywords: Training Model, Reaction Speed, Evasion Technique, Double Pencak Silat, Attack Machine

INTRODUCTION

The double category is one of the artistic categories in pencak silat competitions. In this category, two practitioners from the same team perform together, showcasing their skill and agility in both offense and defense. Every movement they display must be planned, logical, effective, and executed confidently, whether unarmed or using weapons (Muttaqin, 2019). To achieve excellence in pencak silat, a practitioner must possess comprehensive skills in all aspects of the martial art. This includes mastering physical condition elements such as leg muscle explosive power, agility, and strength. Additionally, the practitioner must be proficient in various techniques, including punches, kicks, blocks, evasions, sweeps, and takedowns (Edwarsyah, 2017).

In the artistic category, particularly the double category, the biomotor components required in pencak silat are reaction speed, strength, power, flexibility, agility, and coordination (Fatoni, Nurhidayat, & Sudarmanto, 2018). During individual training, athletes often struggle to effectively develop evasion techniques, frequently sustaining minor injuries (direct trauma) while practicing evasion techniques involving the use of wooden sticks or stainless steel machetes. These injuries can sometimes result in bleeding, which can hinder the training process. This indicates an increased risk of injury, necessitating extra attention to safety and the proper use of equipment and techniques during training (Bhakti, 2022). The combination of several biomotor skills performed simultaneously to achieve optimal results also requires cardiovascular endurance, which is the ability to engage in physical activity of moderate to high intensity for extended periods. This involves the heart, blood vessels, and lungs in delivering oxygen to the muscles (Permadi, Julianti, & Subandi, 2023).

Reaction speed is the ability of an athlete's organism to respond to a stimulus as quickly as possible to achieve the best outcome. From the above definition of reaction speed, it can be understood that pencak silat athletes, particularly in the double category, require good reaction speed to respond to stimuli quickly and accurately when executing evasion techniques, ensuring that the sequence of movements aligns with the coach's expectations. (Humaid, Apriyanto, Junior 2021).

Based on this preliminary information, the researcher aims to create and develop a novel product: a training model for reaction speed in evasion techniques for the double category of pencak silat, based on the Attack Machine. This model is expected to enhance the effectiveness of training and the quality of reaction speed in evasion techniques, contributing to the achievement of excellence in double category pencak silat athletes.

METHOD

Research Design

This research was conducted using the Research and Development method. The research procedure followed the ADDIE model (Tegeh, Jampel, & Pudjawan, 2014). This model is one of the methods used in developing training models by considering the basic stages of simple exercise design, which include five phases: (a) Analysis, (b) Design, (c) Development, (d) Implementation, and (e) Evaluation (Benny A. Pribadi, 2009) (Sakti, Siregar, & Sulaiman, 2023).

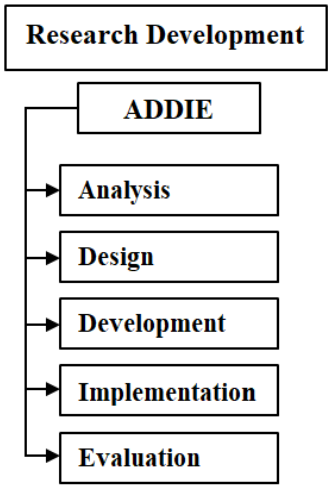

Figure 1. *Flowcart of Research*

Participants

Participant selection in this research was done using purposive sampling. For the validation of the Instrument Test, the validation team included one expert who is a pencak silat lecturer, one expert who is a pencak silat coach, and one expert who is a sports testing and measurement lecturer. For the model validation, the team comprised two experts who are pencak silat lecturers and one expert who is a pencak silat coach. In the product effectiveness testing phase, the sample consisted of 30 pencak silat athlete students from the Sports Achievement Club at Universitas Negeri Jakarta.

Table 1. Research Participants

Phase	Description	Total

Instrument Test Validation	Pencak Silat Lecturer	1
	Pencak Silat Coach	1
	Lecturer in Sports Testing and Measurement	1
Model Validation	Pencak Silat Lecturer	2
	Pencak Silat Coach	1
Implement ation	Pencak Silat student Athlete	30

Instrument

The researcher developed a medium as an Instrument Test to assess the reaction speed quality of evasion techniques in the research subjects, used as both pretest and posttest in the study. The developed medium is described below. The Attack Machine Test is a tool designed to measure the reaction speed of evasion techniques in the double category of pencak silat, particularly for university athlete students in the TGRS category. This test tool consists of three foam sticks, designed to ensure optimal safety. Each foam stick simulates an attack. The blue foam stick simulates attacks to the neck and head area, with variations such as slashes, swings, and strikes. The red foam stick simulates attacks to the chest, abdomen, and waist area, with simulated attacks including stabs, punches, and straight kicks.

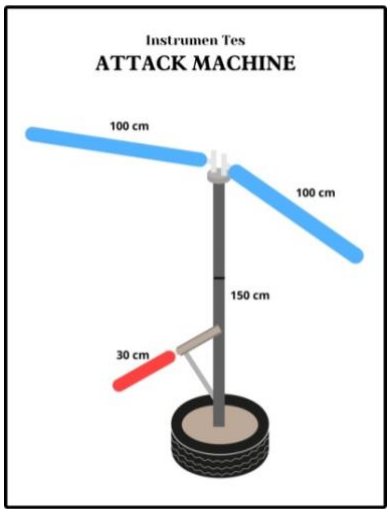

Figure 2. *Attack Machine Test (Instrument Test)*

Data Collection

Data collection on the reaction speed quality of evasion techniques in the double category was conducted by university athlete students of pencak silat. Through both pretest and posttest using the previously described Instrument Test. Following the pretest, the samples were subjected to treatment in the form of a training model, with training sessions held twice daily for 9 days, totaling 16 sessions. Practice

occurred 12 to 16 times and resulted in permanent changes over a long period.

Data Analysis

The data analysis techniques include quantitative descriptive analysis and qualitative analysis techniques.

RESULT AND DISCUSSION

Before completing the development of the training model for reaction speed in evasion techniques in the double category of pencak silat based on the Attack Machine, several preliminary stages were conducted, namely the preliminary study phase and the development model phase. The sequence of stages is as follows:

1. Stage Analysis

   In the preliminary analysis study, the researcher addressed existing issues by conducting analysis, observations, and interviews with stakeholders and relevant organizations proficient in the field. This aimed to identify the problems at hand. Subsequently, the researcher identified the need for a required product and clarified the expected impact of the product under development. Considering these identified issues, the researcher needed to develop a training model capable of enhancing the required reaction speed in evasion techniques for university students in the double category of pencak silat. With the introduction of the Attack Machine, it is anticipated that this tool can address the aforementioned issues, particularly since the Sports Achievement Club of Pencak Silat at Universitas Negeri Jakarta currently lacks training aids for double category evasion techniques. Therefore, the development of a training model for reaction speed in evasion techniques based on the Attack Machine is considered a suitable solution, given the importance of evasion techniques in the double category. Data obtained from analysis, observations, and interviews were used to construct the training model for reaction speed in evasion techniques in the double category of pencak silat based on the Attack Machine.

2. Stage Design

   The researcher established the objective to make decisions and specify the details of each component item in the product

model to be developed, namely the training model for reaction speed in evasion techniques for the double category of pencak silat based on the Attack Machine. This objective aligns with the previously conducted needs analysis.

3. Stage Development

The researcher created and developed the product through a series of stages. The development phase began by integrating all previously designed components. In this research, the Instrument Test used is a tool called the Attack Machine Test, which required validation by experts before implementation in the pretest and posttest studies. The experts involved in this research were academics and practitioners specializing in the double category of pencak silat and sports measurement testing. Following the validation of the Instrument Test, the final percentage analysis showed a validation rate of 96.2%, indicating that the product fell within the "Very Good" category.

In addition to the Instrument Test being validated by experts, the training model will be evaluated and validated by experts including pencak silat lecturers, pencak silat coaches, and sports measurement testing experts. While various inputs were provided for the training model, they did not alter the existing design. The validated and designed training model will be developed into a product and undergo a trial for evaluation before its implementation.

4. Stage Implementation

During the implementation phase, a treatment comprising 16 training sessions was administered using 11 models of double category evasion technique training based on the Attack Machine. Below are the 11 models:

1) Front Body Dodge Right
2) Front Body Dodge Left
3) Back Head Dodge Right
4) Back Head Dodge Left
5) Back Body Dodge Right
6) Back Body Dodge Left
7) Body Evasion Backwards Right
8) Body Evasion Backwards Left
9) Body Twisting

10) Head Twisting Right
11) Head Twisting Left

The implementation aimed to assess the effectiveness and quality of the 11 Training Models for Reaction Speed in Double Category Evasion Techniques based on the Attack Machine. This was done through pretest and posttest evaluations using the created Instrument Test. The results showed an average score of 58.3 in the pretest and 67.5 in the posttest, with standard deviations of 21.104 and 17.555 respectively. According to the t-test table with a significance level of < 0.05 for the One-Sided p Mean Difference Two-Sided p Std. Error Difference, it indicates that the implemented Training Models could enhance the effectiveness of training and the quality of reaction speed in double category evasion techniques in pencak silat.

5. Stage Evaluation

The developed Training Model for Reaction Speed in Double Category Evasion Techniques based on the Attack Machine is an effective effort to enhance the quality of reaction speed in double category evasion techniques in pencak silat.

CONCLUSION

The developed Training Model for Reaction Speed in Double Category Evasion Techniques based on the Attack Machine can be utilized as an effective and efficient variation in evasion technique training. This model impacts the improvement of reaction speed in double category evasion techniques.

REFERENCES

Libraries in scientific magazines/ journals:

Bhakti, M. W. (2022). Metode Pengembangan Alat Bantu Latihan Kecepatan Reaksi Hindaran Kategori Ganda Pada Pencak Silat. *Jurnal Cakrawala Ilmiah*, 1(7), 1671–1680. https://bajangjournal.com/index.php/JCI/article/view/1784

Edwarsyah. (2017). Pengaruh Metode Pelatihan Circuit Training Terhadap Kondisi Fisik Atlet Pencak Silat Unit Kegiatan Olahraga Universitas Negeri Padang. *Program Studi Pendidikan Jasmani Kesehatan Dan Rekreasi, Fakultas Ilmu Keolahragaan, Universitas Negeri Padang*, 1–10.

Fatoni, M., Nurhidayat, & Sudarmanto, E. (2018). Aplikasi Latihan Kombinasi Zig–Zag teknik dan Pengaruhnya Terhadap Kecepatan Tendangan Sabit Pesilat Putra JPOK Fkip Universitas Sebelas Maret Surakarta. *Jurnal Muara Oahraga*, *1*(1), 64–75.

http://ejournal.stkip-mmb.ac.id/index.php/pjkr/article/view/58

Humaid, H., Apriyanto, T., Satriando, G., & Junior, H. (2021). Relationship Of Speed , Reaction And Concentration To The Achievement Of Precision. *Gladi Jurnal Ilmu Keolahragaan*, *12*, 10–16. https://doi.org/10.21009/GJIK.123.02

Muttaqin, M. R. Al. (2019). Analisis Kondisi Fisik Atlet Pencak Silat Kategori Tunggal Ganda Regu Puslatcab Pencak Organisasi Tuban. *Pendidikan Kepelatihan Olahraga, Fakultas Ilmu Olahraga, Universitas Negeri Surabaya*, 1–7.

Pasha, A., Permadi, P., Julianti, E., & Subandi, O. U. (2023). Model Of Based Physical Fitness Exercisegurilapss Gymnastics (Mountain, Rimba, Ocean, Beach, River, Cultural Arts) Age 20-40 Years. *Gladi Jurnal Ilmu Keolahragaan*, *14*(02), 229–237. http://journal.unj.ac.id/unj/index.php/gjik

Sakti, C. P., Siregar, N. M., & Sulaiman, I. (2023). Football Passing Training Model Based On Game For Children (10-12 Years). *Gladi Jurnal Ilmu Keolahragaan*, *14*(03), 348–355.

Libraries in Handbook:

Tegeh, I. M., Jampel, I. N., & Pudjawan, K. (2014). Model Penelitian Pengembangan. Yogyakarta: *Graha Ilmu*, 88, 90-92.