ASEAN SPORT UNIVERSITY
INTERNATIONAL CONFERENCE

PROCEEDING

NATION CHARACTER
BUILDING THROUGH SPORT

PALEMBANG
2014
NATION CHARACTER BUILDING THROUGH SPORT

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Once every two years, ASEAN University Sport Council holds an International conference on sport science in conjunction with ASEAN University Games.

The 2nd AUSC International Conference, titled “Nation Character Building through Sport”, will be held at Politeknik Sriwijaya in Palembang. It will deal with various topics on the sports agenda.

The reasoning is that moral behavior is acquired through social interaction that occurs through sport and physical activity conducted in a collective. Whether or not sport has a positive impact on character-building in individual is highly dependent on the context of the program and the values promoted and developed.

In this respect, physical educators, coaches, trainers or community leaders have a determining influence on a young person’s sporting experience and on the degree of “character building” that can arise. Some research also indicates that physical activity outside of competitive sport may be more effective in promoting mutual understanding and empathy among young people.

2# AUSC International Conference (AUSCIC) then focuses in the issue about how sports could develop character of a nation.

AUSC President

Prof. Dr. Anuar bin Hasan
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The Development Of Single Move In Pencak Silat For Ages 9 To 12 Years

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Email: johansyah8886@yahoo.co.id

Abstract
This study aims to: (1) develop a single move model for ages 9-12 years, (2) determine the effectiveness of the development of a single move in Pencak Silat. This study is a research and development carried out in 5 steps by adapting the research and development according to Sugiyono model consisting of: assessment needs, product development analysis, various proper move model training development, product design and testing, and product revision. The validation of the content of such products is made by some experts in the development of pencak silat moves, child development and motion learning. Product tryout involves 20 elementary school athletes of some martial art schools in Jakarta. The use of experiment involves 30 student athletes from elementary school in Jakarta. Data collection instrument is in the form of a general interview guide, field studies, validation and observation sheet for models, rubric assessment and the ability of a single move.
The result of this study is a single move model in pencak silat for elementary school students of ages 9-12 years. According to experts, martial art trainers (move), and the result of the test, can be concluded that the single move model for elementary school students of ages 9-12 is more effective to improve the ability of basic move at its ages.

Keywords: Development, Single Move, Pencak Silat, ages 9-12 years

INTRODUCTION
Pencak Silat is a martial sport branch that originated from Indonesia, which continues to develop until recently, both in terms of organization and the rules of game.
The accommodated rules of game for pre-teen of ages 9-12 years, indicate that PB IPSI or Persilat continues to anticipate the public interest of Pencak Silat game. The readiness of PB IPSI with the creation of the game rules must be supported by existing development by not forgetting the principles of growth and development of children of that ages.
The single move competed at this time is standard moves. The term of standard gives a definition that the move is one form of a complex skill that consists of a wide range of motion and moves, both empty-handed and weapons. Meanwhile, in the single move of standard move consists of 7 empty-handed moves, 3 machete weapon moves and 4 stick weapon moves, with a 3-minute appearance. The series of motion have the same rules for both teens and adults.
Pre-teen ages are elementary school ages ranging between 6-12 years according to Seifert and Haffung have three types of development: 1) Physical Development;
2) Cognitive Development; 3) Psychosocial Development; Physical Development according to Sumantri (2005) is development that includes biological growth such as the growth of brain, muscles and bones. At the age of 10 years, the height and weight for both boys and girls approximately gain 3.5 kg. But after adolescence, namely 12-13 years girls develop faster than boys. Based on the background of the problem can be formulated issues as follows: How is the development of a single move for the sport of pencak silat of ages 9-12 years?

**Basis Theory**

Model development is an ongoing series of processes related to the previous model, the evaluation of the current athletes, and the very strong scientific foundation. One of the researches that is relevant and can always be used is research and development. Research and Development is a study that is not used to test a theory. What is produced is tested in the field and then revised until the results are satisfactory. According to Sugiyono (2009) the research and development is the research used to produce a particular product, and test the effectiveness of the product. Then according to Sukmadinata (2005) and Dwiyogo (2004), research and development is a process or steps to develop a new product or improve the existing products, which can be justified. They also give an opinion that the research development is a research-oriented development to produce or develop a product, for example, to develop a sport school model, develop physical education curriculum, develop strategies/methods of sport learning, develop sport learning media, develop sports instructional text book and so on.

In this case the study that will be developed is the development of a model of workout single move. Research and development according to Sugiyono (2009) is a study that is used to produce a particular product, and test the effectiveness of the product consisting of ten steps, among others: (1) the potential and problems, (2) data collection, (3) product design, (4) design validation, (5) design revision, (6) product trial, (7) product revision, (8) use trial, (9) product revision, (10) mass production.

**Model Concept Developed**

A single move is one form of a complex skill that consists of a wide range of motion and moves, both empty-handed and weapons. In the rule book is mentioned that: a single category is the martial art game performing a fighter to demonstrate their skills in a single standard move correctly, precisely and steadily, full of inspiration with empty-handed and weapon. Meanwhile, in a single move of standard move consists of 7 empty-handed moves, 3 machete weapon moves and 4 stick weapon moves, with a 3-minute appearance. In a single category game, a good fighter performs a single empty-handed move, machete and toya weapons that should be with the order of motion or moves properly for 3 minutes.

**Characteristics of Elementary School Children**
Elementary school students are a group of children of ages 7-12 years. Physically, boys are better than girls. Both physically do not have apparent differences in the body muscles.

The characteristics of learners of ages 6-12 years according to Nursidik Kurniawan (2005), are as follows. a) Happy to play; b) Happy to move. c) Happy to work in groups; d) Happy to feel or perform or demonstrate something directly. The development at the ages of 6-12 years according to Syamsu Yusuf (2006: 178-184) is: a) Intellectual development; b) Language development; c) Social development; d) Emotional development; e) Moral development; f) Religious development; g) motor development.

The development of a single move of pencak silat for ages 9-12 years, is compiled based on the development of elementary school or pre-teen ages, so that the dominant muscle analysis in a single move technique performed is gained. From this analysis, it can produce a single move design which will be developed as locomotor and non-locomotor movements, while manipulative motion is removed.

**METHODS**

The aim of this study is to develop a single move for the sport of pencak silat of students level at the ages 9-12 years, and of this research development is to produce a product in the form of a single move of pre-teen of ages 9-12 years made in the form of manual containing the movement of a single move for the sport of pencak silat.

The research was conducted in Padepokan TMII and Elementary Schools, among others: SD 05, SD 07, SD 08, Jagakarsa, Jakarta Selatan. The time of this research was planned for 4 (four) months, namely from August-November 2014. The purpose of the research for the development of a single move for elementary schools or pre-teen of ages 9-12 years.

This research was conducted using the method of Research & Development (R & D) to develop and validate a product in the form of a single move for the sport of pencak silat for elementary school level students. According to Sugiyono (2009; 407) the research and development is a research method that is used to produce a particular product, and test the effectiveness of the product. The research and development method used from Sugiyono that has the following steps:

![Diagram of Research and Development Model](image)

**Figure 1. Steps of Research and Development Model**
Source: Sugiyono. Research and Development Method

(1) the potential problems (literature review, subject observation, subject report preparation) (2) data collection (3) product design (4) design validation (5) performing product revision (6) performing product trial (7) performing product revision (based on the suggestions and test results). (8) use trial (9) product revision (10) mass product (making a report about a product).

The decision making on the data analysis is done by looking at the reliability coefficient value of calculation results. If the calculated reliability coefficient is greater than the reliability coefficient in the table, then the item is considered reliable, and vice versa if the calculated coefficient reliability is smaller than the reliability coefficient in the table then the item is considered unreliable. The results of the calculation of reliability degree of the test instrument can be seen in the following table:

<table>
<thead>
<tr>
<th>No</th>
<th>Test Instrument</th>
<th>r. calc</th>
<th>r. Correlation</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Movement truth Ability</td>
<td>0.867</td>
<td>r. calc &gt; r. table</td>
<td>Reliable test instrument</td>
</tr>
<tr>
<td>2</td>
<td>Movement Stability Ability</td>
<td>0.982</td>
<td>r. calc &gt; r. table</td>
<td>Reliable test instrument</td>
</tr>
</tbody>
</table>

Remarks: r. table of 5% = 0.456

Based on the Table 1, then the test instrument prepared is expressed to have a high level of reliability. With the calculated r approaching the correlation coefficient value of 1.0. The higher the correlation coefficient means that the consistency between the results of the imposition between the two tests is getting better and the measuring results of both tests are said more reliable.

1) Use Trial

The use trial, aims to determine deficiencies or obstacles that arise during the implementation of a single move in some different places and different subjects.

2) Data Analysis Technique

Data analysis technique used in this research is the qualitative and quantitative descriptive data analysis. The qualitative descriptive data analysis technique is performed on the observation result of the need analysis to clarify the existing problems so as to strengthen the research background and on the data corrective suggestion from validators and observers to be concluded as a revision.
The range of scores on the product validation questionnaire is five, namely: (1) the score of 1 for very inappropriate assessment, (2) the score of 2 for inappropriate assessment, (3) the score of 3 for quite appropriate assessment, (4) the score of 4 for appropriate assessment, and (5) the score of 5 for very appropriate assessment. Variations in a single move compiled are considered worthy to be tested for product trial and use trial when quantitatively.

The formula to calculate the results of the validation by experts for the products developed is as follows:

1) The formula to process the overall data.

\[
P = \frac{\Sigma X}{\Sigma Xi} \times 100 \%
\]

Remarks:
- \( P \) = Percentage of expert validity results
- \( \Sigma X \) = The total number of expert answers
- \( \Sigma Xi \) = The total maximum score
- 100\% = Constant

Based on the assessment criteria above, is obtained a draft quality standard of a single move with the details as follows:

a) The draft of a single move variation developed is declared invalid and used when the average score obtained is \( \geq 60\% \).

b) The draft of a single move variation developed is declared invalid and not used/enhanced when the average score obtained is \( \leq 60\% \).

The range of scores on the questionnaire observations on product trials and testing the use of five, namely: (1) the score of 1 for very inappropriate assessment, (2) the score of 2 for inappropriate assessment, (3) the score of 3 for quite appropriate assessment, (4) the score of 4 for appropriate assessment, and (5) the score of 5 for very appropriate assessment. Variations in a single move compiled are considered worthy to be tested for product trial and use trial when quantitatively.

The calculation of score according to Saifuddun Anwar (2004) reaches the minimum feasibility standard. The categorization norm used is in accordance with the following condition.

**Table 2. The Categorization Norm**

<table>
<thead>
<tr>
<th>Formula</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>( X &lt; (\mu-1,0\sigma) )</td>
<td>low (inappropriate/ineffective)</td>
</tr>
<tr>
<td>( (\mu-1,0\sigma) \leq X &lt; (\mu+1,0\sigma) )</td>
<td>medium (quite appropriate/quite effective)</td>
</tr>
<tr>
<td>( (\mu+1,0\sigma) \leq X )</td>
<td>high (appropriate/effective)</td>
</tr>
</tbody>
</table>

**Revising Products**
From one test is obtained an initial product draft, so that the form of the product is still not considered final. Results of the assessment and corrective suggestion on the results of large-scale testing and field note are used as a material for the product revision to prepare the final product. The final product produced is in the form of a single move for the sport of elementary school student level. The final product will be summarized in the form of the implementation of a single move manual for students of pencak silat athletes.

RESULTS

Overall, there are three general purposes to be revealed in the preliminary studies or the need analysis, namely: (1) how well students of ages 9-12 years master a single move; (2) how important the development of a single move model for students of 9-12 years; and (3) the constraints and support found in the development of a single move model for students of ages 9-12 years.

Based on these general purposes, the researchers conducted a preliminary study using in-depth interview instrument to pencak silat coaches especially art coaches and conducted surveys because its main purpose is to conduct the technical preparation by exploring in advance the characteristics of research subjects and places for the research and development.

The results of preliminary studies or further field findings are described and analyzed so as to obtain a formulation of the results of the data that have been collected. The formulation of this result is descriptive and analytical, with reference to the purpose of the preliminary studies. The following will describe the results of a need analysis and field findings obtained by researchers.

Table 3. Results of a Need Analysis and Field Findings

<table>
<thead>
<tr>
<th>No</th>
<th>Butir Pertanyaan</th>
<th>Temuan</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>What material provided in a single move workout for student athletes of ages 9-12?</td>
<td>The coach has given various single move workout to improve the basic skills of athletes, for example, the basic hands and legs attack techniques.</td>
</tr>
<tr>
<td>2</td>
<td>Is the single move workout always given in every workout?</td>
<td>The single move workout is given each move workout based on the order of the series of moves.</td>
</tr>
<tr>
<td>3</td>
<td>How is weapon available for single move workout activities?</td>
<td>Single weapon and Toya are very difficult to obtained in a single move workout when there are many students attending the workout; this obstacle is difficult to overcome and can only be replaced with pickup wood and toya, so its use is by turns. Movements and techniques with weapons are very difficult for students of 9-12 years.</td>
</tr>
</tbody>
</table>
From the results of direct observation in the field are also found that,

1) The researchers found some athletes are not consistent in motion when doing empty-handed move techniques. This is caused by too much movement variation that is almost the same.

2) Athletes are still experiencing difficulties in controlling movement. This is due to athletes do not understand the function of this movement or technique; they are just memorizing the movement.

3) The researchers found that athletes are still experiencing fatigue and instability when doing a single move martial technique. This occurs in the 5th move and so on, thus affecting the ability of the student skills.

4) From the interviews with athletes, it is found that athletes often feel exhausted at a low stance and not consistent with hand movements.

Based on the results of the observation, it is deemed necessary to develop a single move workout model according to students of ages 9-12 years. So researchers think that it is necessary to develop the existing single move workout model by too much modification of the standard move; the model is adjusted to the existing rules and provisions. The focus of development includes aspects of the order of movement and beauty and suitable motion stability for students of ages 9-12 years by providing instruction for movement order and benefits.

Based on the needs analysis, researchers conducted a discussion with the supervisor and the lecturer of pencak silat expert and martial arts coaches and biomechanics experts. From the result of discussion, it is decided to undertake the development of a single move workout model for the sport of pencak silat for students of ages 9-12 years. The single move workout model is chosen because of the need to learn a lot of single move, but often get frustrated when there are too many moves that must be mastered. This workout model is to reduce the use of
machete and Toya weapons which is manipulative movement. This workout is also one of defense workout models.

Based on the need analysis and biomechanical analysis, the researchers develop workout move models for the sport of pencak silat of student level of ages 9-12 years. Researchers expect the resulting product may: (1) help improve the ability to learn a single move for athletes, (2) increase the variety of move workout models for the sport of pencak silat of student level, (3) motivate athletes to perform martial arts workout, and (4) assist the coach in improving student fitness condition.

1. Initial Product Draft

The initial product draft of the development of various move workout model consists of 7 series of empty-handed moves described in a more detail order of movement, the name of movement and the angle position of movement and its benefits.

2. The Results of Expert Validation (Expert Judgement)

The expert validation or initial product evaluation is conducted to evaluate the initial products, provide input for improvement by conducting a conceptual analysis and further being revised and validated. In this research, expert judgment is conducted to obtain input on the preliminary design of initial draft of the move workout variation model for the sport of pencak silat of student level of ages 9-12 years. Validation is done by three material experts, namely (1) Tulus Pribadi, M.Pd, National Move Coach, (2) Hendro Wardowo, M.Pd, a pencak silat lecturer and (3) Eko Wahyudi, a pencak silat expert (a pencak silat coach). The validation is conducted to obtain feedback on the initial draft of move workout model variation for the sport of pencak silat of student level that will be developed.

The evaluation is done by showing a design draft of move workout model variation for the sport of pencak silat of student level, along with an evaluation sheet for experts. The evaluation sheet is in the form of a questionnaire that contains a model lattice, assessment and suggestions questionnaire as well as comments on the draft of move workout model variation for the sport of pencak silat of student level developed. The results of the evaluation in the form of grade for the quality of the model variations and input and comments on the design draft of move workout model variation for for the sport of pencak silat of student level using a Likert scale of 1-5. The scores and criteria used are as follows: (1) the score of 5 if the answer given is "very appropriate"; (2) the score of 4 if the answer given is "appropriate"; (3) the score of 3 if the answer given is "quite appropriate"; (4) the score of 2 if the answer given is "inappropriate" and the score of 1 if the answer given is "very inappropriate".

3. Design Revision

After getting the valid design draft of move workout model variation for the sport of pencak silat of student level will then be tested on a limited group with the purposes to obtain information on whether the move workout model...
variation is effective to increase the muscle strength and endurance of pencak silat athletes of student level.

Based on the data above is then analyzed by repeated observation t-test to determine the effectiveness of move workout model variation. Before performing data analysis of repeated observation t-test, the data normality and homogeneity should be first tested. The test statistic used is the Lilliefors Kolmogorov-Smirnov and Shapiro-Wilk normality test and Levene homogeneity test. The results of the normality test, homogeneity test and repeated observation t-test of initial test and final test data for each test are as follows.

1. Movement Truth Ability

Table 4. Results of Normality Test Analysis of Movement Truth Ability

<table>
<thead>
<tr>
<th>Movement Truth Ability</th>
<th>Kolmogorov-Smirnov(\alpha)</th>
<th>Shapiro-Wilk</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Statistic</td>
<td>df</td>
</tr>
<tr>
<td>Initial Test</td>
<td>0.153</td>
<td>20</td>
</tr>
<tr>
<td>Final Test</td>
<td>0.174</td>
<td>20</td>
</tr>
</tbody>
</table>

From Table 3 it can be seen that the calculated significance values (p-values) of the results of Lilliefors Kolmogorov-Smirnov and Shapiro-Wilk normality test for the initial test of movement stability respectively are 0.200 and 0.096, while the p-value of the movement stability final test respectively are 0.115 and 0.071. Thus, the p-value of normality test for initial and final test data is greater than 0.05, meaning both of the data derived from a normal spread population.

Table 5. Results of Analysis of Movement Stability Homogeneity Test

<table>
<thead>
<tr>
<th>Movement stability</th>
<th>Levene Statistic</th>
<th>df1</th>
<th>df2</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Based on Mean</td>
<td>0.019</td>
<td>1</td>
<td>38</td>
<td>0.892</td>
</tr>
</tbody>
</table>

Table 4 shows that the movement stability data has calculated significance value of 0.892. Thus, the calculated significance value of the movement stability data is greater than 0.05, meaning that the data has a homogeneous variant.

After being found that the initial and final test data of movement stability are distributed homogeneously and normally, the repeated observation t-test can be applied. The analysis of repeated observation t-test of the movement stability is as follows.
Table 6. The Analysis Results of Repeated Observation T-Test of the Movement Stability

<table>
<thead>
<tr>
<th>Paired Differences</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
<th>95% Confidence Interval of the Difference</th>
<th>t</th>
<th>df</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Movement Stability</td>
<td>6.900</td>
<td>2.017</td>
<td>0.451</td>
<td>5.956</td>
<td>7.844</td>
<td></td>
<td>15.299</td>
</tr>
</tbody>
</table>

Table 5 shows that the value of the calculated t of the repeated observation t-test is 15.299 at significance level of 5%. This value is greater than the t-table that is 2.093 (calculated t = 15.299 > t table = 2.093). So, there are significant differences between the final and the initial test of the movement stability. Thus, the move workout variation models for the sport of pencak silat of student level are effective to increase the movement stability for pencak silat athletes of student level.

DISCUSSION

Some of the contributing factors experienced during the research includes:
1) The research process is fully supported by pencak silat men of both athletes and coaches; 2) The selection of experts that are appropriate and have free time to do discussion about the developed model is very helpful in the process of research.

While the factors considered as an obstacle in the development of this model are: 1) The use of a mattress as a mat is badly needed, sometimes in several places of workout is difficult to find a mattress; 2) the weather factors that cannot be predicted such as rain sometimes become an obstacle to workout outdoors.

The strengths and weaknesses of the product or the limitations of the research are as follows: 1) The new move workout variation model so that athletes do not feel bored; 2) The move workout variation model for the sport of pencak silat of student level is developed based on the need analysis and the results of interviews with coaches, so that the resulting product is really a necessity in the field of pencak silat; 3) The move workout variation model for the sport of pencak silat of student level is the result of a series of trials resulting in feasible and effective model variation to increase muscle strength and endurance for pencak silat athletes; 4) Can be utilized by coaches and students of ages 9-12 years.

Several weaknesses of the move workout variation model for the sport of pencak silat of student level, among others: 1) The implementation of move workout variation model requires manual that they should have from the outside so that it is burred the school/club financial club; 2) To be able to practice alone
requires a more interesting book with pictures and color; the book should be created so that it takes some costs to create it.

CONCLUSION

Based on the results of the research, it can be concluded that it is necessary to create a draft of product in the form of a single move for the sport of pencak silat of student level of ages 9-12 years, which consists of 7 empty-handed moves. Meanwhile, the move is; (1) the move 1 is a series of forward movement step (2) the move 2 is a series of forward to the right side step (3) the move 3 is a series of forward movement step (4) the move 4 is a series of forward movement to the left side step (5) the move 5 is a series of movements in a steady position (6) the move 6 is a series of forward movement and jump backward (7) the move 7 is a series of sweep movement in place and back kick. In the final stages of research can also be concluded that the empty-handed move of the sport of pencak silat of student level is effective to increase the mastery of memorizing and meaning of movement. This can be seen from the results of product trial by using the repeated observation method. In the calculation of move mastery test results performed with repeated observation t-test, 100% of the result of calculated t is greater than t table (calculated t > t table). This means that there is a significant improvement between the initial and final tests. That is the mastery of a single move for the sport of pencak silat of students level of ages 9-12 years is effective to increase the mastery of a single move of pencak silat athletes of student level of ages 9-12 years.

The implications on the development of a single move model in improving the ability of a single move for student level athletes. There are several implications of the results of this research that can be stated as follows.

The findings of this research indicate that there is an increase in the ability to learn a single move for athletes using empty-handed move for the sport of pencak silat of student level. The results of this research have implications on several things, namely the importance of proper training and in accordance with the characteristics of students of ages 9-12 years. Second, the need for a single workout model variation to be developed for locomotor and non-locomotor movement. As for weapon moves are deleted.

REFERENCES

The Development Of Single Move In Pencak Silat For Ages 9 To 12 Years


