



Development of an 8-12 Years Old Pencak Silat Attack Coordination Skills Test

Kurniati Rahayuni¹, Taufik², Khoiriyah³

¹ Department of Sports Coaching Education, Faculty of Sport Science, Malang State University

² Department of Sports Coaching Education, Faculty of Sport Science, Malang State University

³ Department of Sports Coaching Education, Faculty of Sport Science, Malang State University

Email: kurniati.rahayuni.fik@um.ac.id

Abstract. Pencak silat is sport original origin from Indonesia. Formation performance pencak silat is with develop technique motion coordination attack pencak silat . The attack is within pencak silat covers attack hands and feet, however Not yet there are test instruments for know coordination attack child's hands and feet 8-12 years old. Objective from study This is For test validity and reliability motion coordination attack pencak silat 8-12 years old as product development of test instruments. subject study includes, (1) analysis need journal earlier, (2) design product test , (3) Forum Group Discussion (FGD), (4) Test data processing , (5) Validity and reliability data processing , (6) Articles. Research results This produce Product Moments with validity 0.804 (Excellent) and reliability 0.913 (Excellent). Study test This proven in a manner accurate and validated for made evaluation a coaches and non- trainers in development motion technique base coordination attack pencak silat 8-12 years old.

Keywords: Coordination, Attack, Age 8-12 years, validity, and Pencak Silat

1 Introduction

1.1 Introduce the Problem

One originating sport from Indonesia is Pencak Silat. Pencak silat can interpreted as sports use style motion body and also the strength within every technique (1). Pencak silat Lots competed in various event national, even moment This pencak silat Already start competed in event international. In article (2) according to Wilujeng said that one being pusher he advanced pencak silat is formation something organization Bond Indonesian Pencak Silat (IPSI). That's what forms performance athlete pencak martial arts and not only can done as a sports medium for fitness body (3). According to regulation match Pencak silat National Conference in 2012 said that pencak silat own category match art and and fight. Art is shared become singles, doubles and teams. Where as in category fight distinguished from facet weight with two people mutually opposite (4).

1.2 Explore Importance of the Problem

For reach maximum performance need exists ability base that is ability element technique. Basic technique in pencak silat shared become stance, pairs, blocks, punches, attacks, and slams. Attack is one tactics in pencak martial arts used for give resistance. Pesilat in the a match will more use technique attack and defense because own high point value (5). Attack own component foot and hand strikes in every the movement. Attack hand is punches, kicks, and elbows. Whereas foot strike is divided kick become kick front, T kick, sickle, and kick turn or behind (6). Attack can stated legitimate is when a attacker can put target in a manner appropriate to against. Attack need coordination in each the movement. Coordination according to Nurrochmah quoted in article (Hasyati1, 2021) is ability technique performed in a manner accurate, effective, efficient and done with good mastery in a manner together.

1.3 Describe Relevant Scholarship

In study Nuraisyah (7) discuss about how deep leg attack facet condition physique for athlete That alone. Whereas study This will drip focus on motion technique base pencak silat For attack hands and feet. Attack hand in study earlier only little is discussed. it corroborated by the article owned by Suryadin (8) who mentioned that foot strike is capable attack make against disabled. So that Lots discussion about How foot attack can developed. Whereas coordination refers to movement base attack hands and feet together Still Not yet found. If attack can done with coordination hands and feet will increase ability attack For get away points more high. Good coordination will can make it easy efficiency time for form A savings energy inside body to stay increase. Lack of coordination will also make part athlete no will control full all components important moment practice. Athlete will easy feel fatigue because no can arrange coordination with Good (9). So that need exists recency research conducted with see motion base attack for create norm evaluation new test for training continuity for a coach or no coach

For develop technique base coordination attack good hands and feet can done since child 8-12 years old. Skills test conducted since age early will form strong and adaptable endure from attack come back against (10). In book Long Term Athlete Development (11) explained that age Learning to train is ages 8-11 years (women) and ages 8-12 years (boys). Regulation Match Pencak Silat National Conference 2012 article 3 mentioned that category class match for child age early shared become a number of class that is category fight For child age early boy and girl is 26-60 kg (4). Whereas in art shared become singles, doubles and teams. A children aged 8-12 years will do various skills new for prepare to more skills general. A child age early will go out out of his comfort zone and get started develop ability with existing conditions and environment around him. At stage This child will start adapt with act behavior, skills, skills, and patterns think (12). Ability basically that's what it will be refers to ability coordination motor a child (13). motor in age child distinguished become motor rough and motorized smooth. Besides that child will start evaluate what's inside environment with response spontaneous with condition is felt child age early. It will give impact for always notice every matter with right and true thorough (14).

1.4 State Hypotheses and Their Correspondence to Research Design

Evaluation development test Skills coordination attack pencak silat This will done with use test and measurement. Tests and measurements Skills pencak silat Once done analysis to child age early but there is a number of existing weaknesses in test Skills the

Table 1. Analysis test Skills pencak martial arts already There is

Skill Test	Ministry of Youth and Sport (2018)	Johansyah Lubis (2014)
Tests performed	<ol style="list-style-type: none"> 1. Speed kick 2. endurance _ kick 3. Accuracy kick 4. Drop 5. Agility kick sickle 6. Sparring 	<ol style="list-style-type: none"> 1. Attitude base pencak silat 2. Speed kick 3. Agility kick 4. Coordination kicks and punches
Superiority	<ol style="list-style-type: none"> 1. Amount test more diverse 2. Model tests carried out tested with test in the manual 3. Tests performed sequentially in accordance with need implementation to be tested 4. There is information method for evaluate tests performed 5. There is example charging form score test Skills 6. Tests performed use method score or got through values performed by athletes the 	<ol style="list-style-type: none"> 1. There is procedure indicatorfor do test (objective , equipment , officer , execution) 2. There is example form evaluation test 3. There is necessary steps passed before and after test 4. There is example norm study from score test results 5. Lack of explanation of the procedure implementation test Skills
Weakness	<ol style="list-style-type: none"> 1. Skill test No There is specification target age 2. No exists example evaluation score results test 3. No exists method For count score in a manner 	<ol style="list-style-type: none"> 1. Skill test No There is specification target age 2. No exists method count score statistically

statistics (results analysis correlation) respectively validity and reliability (determination)	3. No exists validity and reliability test
---	--

Source: (1, 15)

According to opinion Suharsimi in article Becker (2015) explained that for can do test and measurement need exists element validity, reliability, objectivity, practicality, and economical. Element measurement validity is one tool measure what you can used for state to validan (truth) a test as measured by the observer (17). For test to validity study This obtained from results discussion together expert pencak silat. Whereas element reliability is observations made for prove is something test tool measuring own possible results proven when shows significant (balanced) data during test several times with period time different (18). Reliability done in the process of two tests or more in a number of time for can said that a test the reliable with results same test in period time implementation test the. If something test own mark high validity and reliability so can said that the more valid the data that has been obtained in a research instrument (19). Initial process test and measurement is know condition start of each child For find success tests and measurements to be carried out development coordination attack pencak silat will done with measure ability a athlete in know ability movement technique base attack pencak true martial arts as an effective medium motion basic. The assessment instrument that will done is with coordinate attack hands and feet.

2 Method

2.1 Identify Subsections

Development study This use the ADDIE method. ADDIE has stage Analysis (stage analysis), Design (stage planning), Development (stage development), and Implementation (stage implementation) all stage the will enter in stage Evaluation (Evaluation) is used for prevent exists error (20).

2.2 Participant (Subject) Characteristics

Analysis object made will direct enter into the means education school base ages 8-12 who have extracurricular Pencak Silat in Malang City.

2.3 Sampling Procedures

Data collection for 20 children in Malang City refers to a random sampling technique in 3 places extracurricular pencak silat level school base namely SDN Tunjungsekar 04 Malang City, SD Muhammadiyah 05 Malang City, and MI Al-Fattah Malang City.

Research flow depicted in picture under

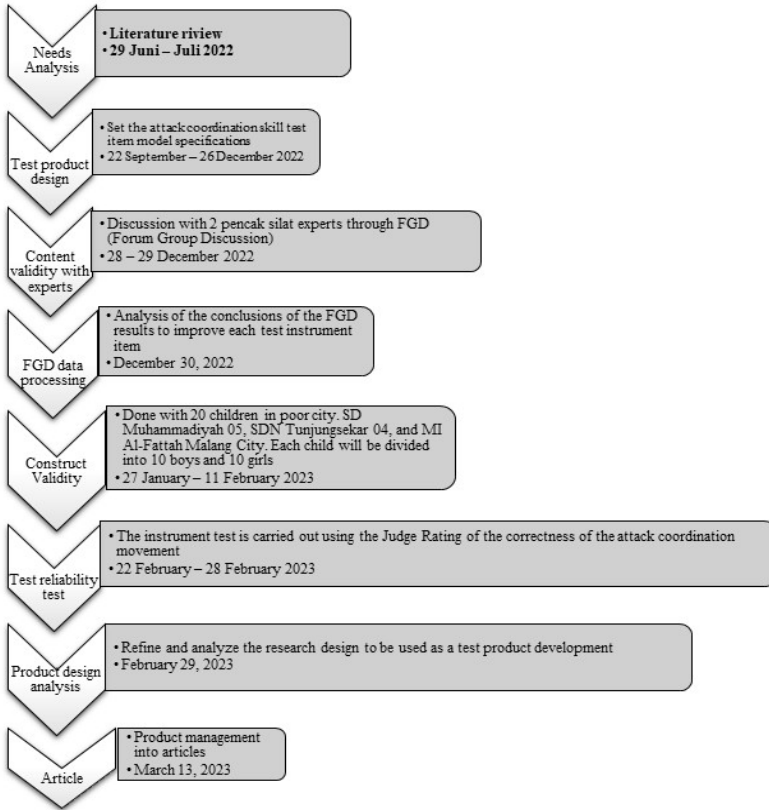


Figure 1. Research flow development test Skills coordination attack pencak silat 8-12 years old

2.3.1 Sample Size, Power, and Precision

Stage implementation done with observation in a manner direct to object evaluation as many as 20 children are divided into 10 boys at SD Muhammadiyah 05 Malang City and 10 girls divided by 6 girls at SD Tunjung Sekar 03 and 4 women at MI Al-Fattah Malang City. All stages in study development This will direct become a evaluation report research.

2.3.2 Measures and Covariates

Stage planning done with start make criteria evaluation validated attack through Group Discussion Forum (FGD) with expert pencak silat.

2.3.3 Research Design

Furthermore done reliability with use Processed Re -Test use formula coefficient correlation form Judge Rating. In book (21) For count results validity and reliability (Test Re-Test) exist formula used in calculation formula as following:

$$r_{YX} = \frac{N_x \sum XY - (\sum X)(\sum Y)}{\sqrt{\{N_x \sum X^2 - (\sum X)^2\} \{N_x \sum Y^2 - (\sum Y)^2\}}}$$

Description:

N = Amount respondent

X = Test result skills development coordination attack

Y = Rating result observer

Table 1. Criteria for the validity coefficient.

Criteria	Information
<i>Excellent</i>	0.80 – 1.00
<i>high</i>	0.70 – 0.79
<i>Average or Fair</i>	0.50 – 0.69
<i>Unacceptable</i>	0.00 – 0.49

Source: Budiwanto, (2015)

3 Results

3.1 Stage Analysis (Analyze)

At stage analysis development This identify from various Literature Review found through study earlier. However, research earlier only emphasize problem with conditions physique for coordination attack. Whereas For coordination justification motion attack Still Not yet found for child 8-12 years old. It done for analyze still lacking not yet done. For strengthen related Literature Review found done interview to 3 trainers in three place schools in Malang City, namely SDN Tunjungsekar 04 Malang City, SD Muhammadiyah 05 Malang City, and MI Al-Fattah Malang City regarding How attack done when practice. This is also done interviews with athletes about How they do motion coordination attack. Solving selected problem is with develop coordination instruments proven attack its validity and reliability so that can applied by trainers and non-trainers For 8-12 years old

3.2 Design Stage (Design)

Stage development done with develop the test instrument to be product that can validated. In making product test instrument, development product This will done validity contents. validity content will done with 2 experts pencak silat for know level feasibility of each instrument test. Developed procedure include, (a) produce product beginning in the form of a test instrument; (b) carry out test and revise; (c) trial planning field

3.2.1 Product Test Instruments




Stage beginning that is develop test instruments as reference product to be developed. Stage This will identify internal instruments techniques base motion attacks

carried out. After the instrument is prepared will can be in the form of an instrument test whole includes:

A series of test instruments

After do observer FGD results do series of research instruments described as following:

Table 1. Series of test instruments attack

No.	Test Series	Picture	Procedure
1.	Attack hand punches and attacks kick front	1. Punch attack 	<ul style="list-style-type: none">) Whistle will sounded when will started movement) Athlete Ready stand in front of the target accordingly with specified distance _) Attack will direct about petching held by the tester) Attack done with 30 seconds time) Every attack done with attack hand right + right foot strike . Vice versa _ for 30 seconds) Every attack right and left will summed up in accordance time
		2. Forward kick attack 	
2.	Attack kick free (Punching box facing dynamic)	1. Free kicks (punches , sickles , and T) 	<ul style="list-style-type: none"> a) Whistle will sounded when will start Movement b) Athlete Preparing to stand in front of target for do attack free with a punching box done facing according to the tester c) Kick free to do can choose third kick



- in accordance with position and point comfortable a athlete in attack
- d) Attack kick free done with 30 seconds time
- e) Seriap attack kick done with attack kick right . Vice versa _
- f) Every attack kick right and left will totaled in accordance time

After know the stages of the instrument carried out, research and development this will make norm research that refers to the book owned by Rahayuni, 2021) includes:

Rating norms test

Then done planning criteria norm evaluation test development coordination attack through criteria as following :

Table 2. Criteria for the Development Test Assessment Norms Coordination Attack

Evaluation test 1 (Attack Blow Hands and Kicks front)			
Mark	Criteria	Information	
		Attack Hand	Kick Front
4	Posture , body balance , attack hand that's right , attack kick front right , ended tide attitude	<ul style="list-style-type: none"> ∞ Clench hand ∞ Blow straight ∞ Arm No bent ∞ Target about look 	<ul style="list-style-type: none"> ∞ Position body straight ∞ Use soles _ ∞ About heart target _ or back
3	Posture , body balance , attack hand that's right , attack kick front No	<ul style="list-style-type: none"> ∞ Clench hand ∞ Blow straight ∞ Arm No bent ∞ Target about look 	<ul style="list-style-type: none"> ∞ Position body straight ∞ No use soles _ ∞ No about heart target _ or back

	right , ended tide attitude		
2	Posture , body balance , attack hand No that's right , attack kick front right , ended tide attitude	∞ Clench hand ∞ Blow No straight ∞ Arm bent ∞ Target No about look	∞ Position body straight ∞ Use soles _ ∞ About heart target _ or back
1	Posture , body No balance , attack hand no that's right , attack kick front no right , ended tide attitude	∞ Clench hand ∞ Blow No straight ∞ Arm bent ∞ Target No about look	∞ Position body straight ∞ No use soles _ ∞ No about heart target _ or back

Evaluation test 2 (Attack Kick Free – Pecing facing dynamic)

Mark	Criteria
4	Posture , body balance , kick free right , ended tide attitude
3	stance , 2 kicks free right , ended tide attitude
2	Posture , 1 kick free right , ended tide attitude
1	Posture , kick free no right , ended tide attitude

3.2.2 Validation and Revision

Stage furthermore is do a validation test product. Validation product done is a validity test content and validity construct. Validity content done with 2 experts pencak silat in form of FGD (Forum Group Discussion). This test instrument will submitted to expert pencak silat as measure the feasibility test product development. Assessment results expert criticism and advice the become guidelines are carried out for make product development of this test instrument worth. The results of the FGD data are seen in table 3

Table 3. Data from Pencak Silat Expert FGD results

No.	Member Name	FGD conclusion	Percentage Validation	Instrument Validity Level
1.	Expert 1	a. Every movements made must get clear reference b. Notice every word that is poured in the sentence c. focused to in nice move how	80%	Very valid
2.	Expert 2	d. Reference norm more given more references clear e. Target should used simply	90%	Very valid

3.2.3 Field Trial Planning

Stage final is trial planning to the child aged 8-12 years conducted in Malang City. 3 schools the include; (a) SDN Tunjungsekar 04 Malang City; (b) SD Muhammadiyah 05 Malang City; and (c) MI Al-Fattah Malang City. Conducted field tests will shared into 10 boys and 10 girls.

3.3 Stage Implementation (Implementation)

Stage implementation done with prepare child aged 8-12 years in Malang City. Trials conducted at SD Muhammadiyah 05 Malang City MI Al-Fattah Malang City. With 10 children boys at SD Muhammadiyah 05 Malang City, 6 girls at MI Al-Fattah Malang City, and 4 girls at SDN Tunjungsekar 04 Malang City. So that can produce validity constructs and reliability (Test Re-Test) are calculated with using the same instruments for give sustainable results during a number of time after tested it validity construct which includes:

3.3.1 Validity and Reliability (Test Re-Test)

Result validity test 20 samples research conducted found $r = 0.804$ with use formula coefficient incoming correlation in excellent category. In the validity test counted based on truth movement (X) is called the observer and counts accuracy target (Y) on punching (assessor). Validity test conducted has refer to results Grub Discussion Forum (FGD) with expert pencak silat. the data show study development This have valid test data. Whereas results test- retest reliability is known that calculation correlation between test first and test second produce correlation product moment with number coefficient correlation $r_{XY} = 0.913$. Coefficient results correlation the can classified to in category very high yield or excellent. In assessment test reliability own enhancement enough numbers significant and have constancy so that can made as reject measuring test development coordination attack pencak silat 8-12 years old.

Criteria coefficient correlation validity in test-retest reliability test according to Kirkendal, Gruber and Johnson (1980) in article Sandy Yudasmar (2020) explain that

Table 4. Criteria evaluation test validity

Validity Test Criteria	Correlation Test Coefficient
0.80 – 1.00	<i>Excellent</i>
0.70 – 0.79	<i>high</i>
0.50 – 0.69	<i>Avarage of Fair</i>
0.00 – 0.49	<i>Unacceptable</i>

3.4 Stage Evaluation

In step evaluation, development do the effectiveness of the data obtained through evaluation through validation content, validation construct, and reliability (Test Re-Test). From the results of the instrument test performed can depicted how the test instrument is feasible For applied in practice. Evaluation final based on the execution of the test.

4 Discussion

Pencak silat become one of the current martial arts favored by many people. Pencak silat is one of the traditional forms of character for athletes to develop their expertise through sport of Indonesian origin. The ability of pencak silat is not seldom for an athlete to enter into an event match as a means of achievement. The performance in sport is one thing that can be done with the commencement of coaching talent to the construction process of continuity (22). Coaching can start since an early age with meaningful learning to train 8-12 years old. Coaching performance of pencak silat can start from the motion technique base in pencak silat. The basic technique of pencak silat that has the most profit is with the technique of attack in pencak silat.

Inside pencak silat, there are lots of technique bases that have weaknesses and advantages from every technique. Attack is one technique base used for attack against with high points in a match. Attack consists of hand and foot strike. Foot strike being one of the constant attacks made most frequently by a pencak silat athlete when competing (7). For coaching attack, there exists a motion technique base of hands and feet. Study earlier owned by (5) discusses foot attack and discusses the physical condition required for support attack. Whereas study owned by Nuraisyah (2022) owns the same discussion about coordination attack. But that was discussed inside it is balance coordination eye-hand to attack pencak martial arts that have content condition physical must be done when doing coordination attack eye-hand. Second study does not explain given age for coordination attack to be done.

Description above shows technique base good attack not yet can be developed at the age of 8-12 years. Study This will give evaluation technique base attack that can be developed in accordance with a child's development. Development test technique base attack will be measured with identifying ability of a child for implementing technique base attack with movement of hands and feet separately. It takes validation test to become the most basic thing for measuring readiness of a child. Research conducted (25) covers discussion about validity and reliability (Test Re-Test) tests of pencak silat. Study discusses about test physique for category fight using spss 16. Result validity and reliability show something test can be declared valid and reliable if the test instrument can fulfill need of each test item performed. Meanwhile in the journal international according to Chaabene (26) obtained from a number of tests conducted by research previously with use of method 60% coefficient correlation, 10% use method correlation mixture with use of other methods (95% LOA and analysis regression), and 30% other approaches (eg Wilcoxon Signed Rank Test and sample T-test in pairs). Journal This uses gap methodology adopted from test of self-defense from a number of matches. So that needed analysis validity and reliability with level scale more big with take all sport internationally popular martial arts. Gaps methodologically carried out own tough challenge with interpret test data because use of periodization exercise branch sport martial. For that need exists design validity and reliability test in a manner basic. Before designing validation test FGD (Forum Group Discussion) is needed as evaluation of test instruments. FGD by conclusion explain that there is reference norm evaluation more tests strengthened back and more focus on precision movement attack hands and feet.

Validity test results first rated with measure a number of type suite attack. in this test need observer (X) as assessing observer is a child capable do motion attack hands and feet with right. Appraiser (Y) is required in test this for count how many times one child do attack hands and feet for appropriate about target or petching in 30 second time. Overall results validity the give value of 0.804 which is included in very high category or excellent. object between boy and girl own stable value in test validity this. In test validity This obtained a number of interesting observation, as following: (1) The child will adapt with movement test that will he did, (2) The child will start notice and own spirit good start for respond all what the observer does, (3) Deep taking test beginning this also exists a number of name attack in pencak different martial arts in accordance with his college. Difference name attack that becomes point focus mention movement easy attack understood by children moment do test.

After do test validity stage furthermore is test test reliability as test second. The results of the test-retest reliability test can be is known that technique base attack hands and feet have balanced criteria with a test test validity. Reliability test obtained through observer assessment of test validity as test 1 (X) and test 2 (Y) is the results of the observer test re-test the reliability test. Coefficient this test-retest reliability produce a value of 0.913 or including in category Excellent t. Can interpreted that in test reliability This observer own constraint in the form of, (1) Time is short, observer only given time 1-2 hours for start up do research,m (2) Term day done after test validity and reliability about 1 week with less time. This also causes a child start feel not enough Spirit as the test does validity or test early, (3) Child will start clash argument and will each other bother when one child do test. It become pusher If Lots starting child a little decrease abilities and not a few still experience improvement, (4) Coordination between hands and feet are done a child in a manner together in test reliability it also has level sufficient coordination for child 8-12 years old. Stimulus and readiness physique and one's mind child when start test reliability less impa can controlled. Advice done For future research is (1) Prepare object study athlete in a manner more many, (2) Prepare all management time and conditions in order to be able to estimate all possible conditions happened, and (3) Implement a number of need child For still interested to every tests performed.

Can pulled conclusion in suite test technique base ability coordination attack own results high validity and congeniality test coordination attack this can made guide for evaluate basic motion in evaluate coordination attack.

5 Conclusion

Based on research conducted on concluded that the instrument performed for test validity and reliability developed test for know skills coordination attack pencak silat 8-12 years old. In development test this can become reference for a coach or no coach For measure motion base coordination attack for child age early 8-12 years.

References

1. Lubis J, Wardoyo H. Pencak silat. 2014;
2. Muhammad BU. Kemampuan Pukulan Depan Pada Mahasiswa Pencak Silat Uns. *JSH: Journal of Sport and Health* [Internet]. 2021;2(2):45–50. Available from: <http://ejurnal.mercubuana-yogya.ac.id/index.php/JSH/article/view/2023>
3. Hasyiyati RW, Winarno M. Korelasi kekuatan otot lengan, power, dan koordinasi terhadap pukulan atlet pencak silat. *J. Olahraga Pendidik. Indones.* [Internet]. 2021 Sep. 20 [cited 2023 Oct. 30];1(1):96-107. Available from: <https://jopi.kemenpora.go.id/index.php/jopi/article/view/9>
4. Kriswanto ES. Peraturan Pertandingan Pencak Silat. *Peraturan Pertandingan Pencak Silat.* 2012;132.
5. Guntur Sutopo W, Misno. Analisis Kecepatan Tendangan Sabit Pada Pesilat Remaja Perguruan Pencak Silat Tri Guna Sakti Di Kabupaten Kebumen Tahun 2020. *JUMORA: Jurnal Moderasi Olahraga.* 2021;1(01):27–34.
6. Rahayuni K. Pencak Silat Artistic performance of pencak silat and its mental health effect View project Psychological Demands of Indonesian Elite Athlete View project [Internet]. 2021. Available from: <https://www.researchgate.net/publication/328412846>
7. Nuraisyah W, Hamdani H, Fepriyanto A. Hubungan Keseimbangan Dan Koordinasi Mata-Tangan Terhadap Kemampuan Koordinasi Serangan Dalam Pencak Silat. *PENJAGA : Pendidikan Jasmani dan Olahraga* [Internet]. 2022 Dec 31;3(1):13–7. Available from: <https://jurnal.stkipppgtritreggalek.ac.id/index.php/penjaga/article/view/475>
8. Suryadin T, Sahudi U, Kulyana K. Pengaruh Latihan Tendangan Ke Atas Kursi Terhadap Keterampilan Tendangan Depan Pada Ekstrakurikuler Pencak Silat Di Smk Bina Insan Mandiri. *Journal RESPECS.* 2021;3(2):45–52.
9. Kristriawan A, Sukadiyanto S. Pengaruh metode latihan dan koordinasi terhadap smash backcourt atlet bola voli yunior putra. *Jurnal Keolahragaan.* 2016 Sep 10;4(2):122.
10. Pendidikan S, Olahraga K, Olahraga FI, Surabaya UN. BANYUWANGI Fiza Nur Diono , Tutur Jatmiko S , Pd ., M . Kes Abstrak Tendangan merupakan salah satu gerak tehnik yang paling dominan digunakan dalam pertandingan pencak silat dan mempunyai nilai yang tinggi dari pada pukulan . Penggunaan tehnik tendangan pe. 2021;133–42.
11. Balyi Istvan, Way Richard HC. long term athlete development. Vol. 15. 2016. 1–23 p.
12. Kurniah N, Suprpti A. No Title. 2018;3(1):50–5.
13. Gordon R. A Shorter Guide To Long Term Athlete Development (LTAD). :1–7.
14. Steven T, Suwasono A agung, Yuwono A. Perancangan Board Game Pengenalan Dinosaurius Untuk Anak Usia 8 – 12 Tahun. *Jurnal DKV Adiwarna.* 2015;1.
15. Kemenpora. Petunjuk Pelaksanaan Tes Keterampilan Dan Norma Pplp Di Indonesia. 2018.

16. Becker FG, Cleary M, Team RM, Holtermann H, The D, Agenda N, et al. Buku Tes Dan Pengukuran. Syria Studies [Internet]. 2015;7(1):37–72. Available from: https://www.researchgate.net/publication/269107473_What_is_governance/link/548173090cf22525dcb61443/download%0Ahttp://www.econ.upf.edu/~reynal/Civil_wars_12December2010.pdf%0Ahttps://think-asia.org/handle/11540/8282%0Ahttps://www.jstor.org/stable/41857625
17. Miftahul Janna N, Pembimbing D. Konsep Uji Validitas Dan Reliabilitas Dengan Menggunakan SPSS. 2021.
18. Amanda L. Reliabilitas Dan Validitas (Batch 2). Jurnal Matematika UNAND. 2019;VIII.
19. Kurnia Dewi S, Sudaryanto A, Studi Keperawatan P, Muhammadiyah Surakarta U, Komunitas K. 73 Prosiding Seminar Nasional Keperawatan Universitas Muhammadiyah Surakarta Validitas dan Reliabilitas Kuisisioner Pengetahuan, Sikap dan Perilaku Pencegahan Demam Berdarah. 2020.
20. Maydiantoro A. Model-Model Penelitian Pengembangan (Research and Development. RepositoryLppmUnilaAcId. 2021;(10).
21. Budiwanto S. Tes dan Pengukuran dalam Keolahragaan . 1st ed. Malang: Universitas Negeri Malang ; 2015. 39–45 p.
22. Budiwanto S. Tes dan Pengukuran dalam Keolahragaan. 1st ed. Malang: Universitas Negeri Malang; 2015. 39–40 p.
23. Sandy Yudasmara D, Riyad Fadhli N, Kunci K. Gelanggang Pendidikan Jasmani Indonesia Validasi Eurofit Test Pada Siswa Sekolah Dasar Indonesia. 18 GPJI [Internet]. 2020;4(1). Available from: <http://journal2.um.ac.id/index.php/jpj>
24. Prasetyo A. Agung Prasetyo , M . Pd SMA Negeri 107 Jakarta. 2020;1–24.
25. Saputro DP, Siswantoyo S. Penyusunan norma tes fisik pencak silat remaja kategori tanding. Jurnal Keolahragaan. 2018 Apr 15;6(1):1–10.
26. Chaabene H, Negra Y, Bouguezzi R, Capranica L, Franchini E, Prieske O, et al. Tests for the assessment of sport-specific performance in Olympic combat sports: A systematic review with practical recommendations. Vol. 9, *Frontiers in Physiology*. Frontiers Media S.A.; 2018.

Open Access This chapter is licensed under the terms of the Creative Commons Attribution-NonCommercial 4.0 International License (<http://creativecommons.org/licenses/by-nc/4.0/>), which permits any noncommercial use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

