

Football Skills: Training Methods and Motor Educability

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Abstract—The observations on the ground by the researcher together with SSB coach Siginjai, Mr. Dermawan Siregar, analyzed that some athletes such as defensive, middle, and attacking players still make some mistakes themselves such as 30% passing is still not accurate, 30% dribbling can still be won by opponents, 30% control, and 40% of the kicks have not been directed towards the goal. Based on direct observation, the researcher looked at the training process, the training method given was not in accordance with the age and needs of the athlete individually or it could be said not to apply the individual principles in each exercise. This research compares the influences of drill training method and tactical training method on football skills. 32 school athletes aged 14-15 years old participating in this study were grouped into 4 groups by using ordinal pairing technique. Each group was trained using drill training method (n=16) and tactical training method (n=16). Training was conducted 3 times a week in 90 minutes for each meeting. The IOWA Brace test was applied to measure the motor educability while David Lee skill test developed by Subagyo was adopted to examine the football skills. For data analysis purpose, this study applied a two-way ANOVA. Results of this study indicate that drill training method has greater influence on football skills than does tactical training method on football skill with $0.047 < 0.05$ significance level. Furthermore, athletes with high motor educability level has better football skill than those with low motor educability level on $0.001 < 0.05$ significance level. The results also indicate significant influence of training method and motor educability on football skills with $0.043 < 0.05$ significance level.

Keywords—drill training, football skill, motor educability, tactical training

I. INTRODUCTION

According to FIFA, 4% of total world's population or around 265 million of players and 5 million of referees actively participate in football, the most popular sport in the world [1]. Football is characterized as an intermittent sport which involves individual's motor skills such as running, jumping, kicking, dribbling, and tackling [1]. In football, skill techniques become prerequisite and are highly crucial for performance in the field. It is how to win ball mastery, outwit opponents by passing or dribbling, and, in the end, score goals [2]. The aforementioned skills which involve dribbling, passing, shooting, heading receiving ball and running with the ball as well as various football feints are considered most important component to be trained up to senior level [3].

Referring to the results of the interview and direct observation in some training processes, researchers noted that the given training method has not been suitable to

players' ages. Therefore, training doses are still managed to focus more on the intended goals rather than the needs of individual athlete. Training development is the process through which people undergo lifetime memorable experiences in relation to players' development. The better the coaching is, the faster the players' skill development will be. Coach should adapt and learn to understand the good methods and psychological approach to players in addition to the importance of parents' supports [4]. Another factor influencing football skill training results is motor skill. For this purpose, Brace developed many tests including agility, balance, and strength tests. However, the motor educability test is the most suitable to measure one's ability to adopt new skill [5].

The drill and tactics training methods are among many training methods to help create successful football skills. The drill training method itself focuses on continuous review and repetition of trainings aiming to master the movements being trained [6]. From training time management perspective, drill is a good choice that helps athletes build solid team during trainings and matches [7]. Meanwhile, the tactics play approach is a play aiming at understanding model while emphasizing on types of play skills [8]. The tactical play model is designed to train athletes' tactics in situations as supported by skills related to the sports being trained [9].

This research is based on one previous research indicating that drill training using full pitch results in better replication of movement characteristics in a competitive football match [10] while another research reveals that tactical skill is needed for ones' football career [11]. In result, tactical skill development is better and more applicable for competitive experiences even among younger ages and for a highly qualified talent development program.

The rest of this paper is organized as follow: Section II describes proposed research method of this work. Section III presents the obtained results and following by discussion in section IV. Finally, Section V concludes this work.

II. PROPOSED METHOD

A. Participants

32 football school athletes from Jambi, Indonesia were selected as research samples. Sample selection was conducted by using random sampling and ordinal pairing techniques to group the participants into 4 treatment groups. The athletes participated in this research aged 14-15 years old. Before pretest, motor educability test was conducted to group the subjects. Based on the tests, two groups including

the one with high motor educability ($n=16$) and the one with low motor educability ($n=16$) were created.

B. Training Procedure

Treatments using drill and tactics training methods were given 3 times a week with 90 minutes in every meeting. The training program was designed using training, intensity, volume, and recovery principles suitable with the athletes' characteristics in that age.

C. Football Skill Test

To know the athletes' football skills, David Lee's skill development test developed by Subagyo was adopted [12]. This test has been valid and reliable for measuring ones' football skills. It consists of juggling, ball stopping in the box, dribbling, passing and long pass skills, as well as changing ball direction and rolling ball skills (see Figure 1). Each athlete was given two opportunities to test and was evaluated based on one's best time on the test.

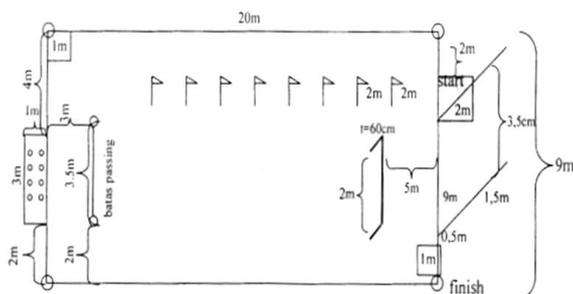


Fig. 1. Instrument Football Skills Test

D. Motor Educability Test

The IOWA-Brace Test for Motor Educability Test was adopted to measure one's ability to acquire new movements. This test consists of 21 test items. However, only 10 items that match the athletes' characteristics including Hop Backward, One Knee Balance, Half Tun Jump, Forward Hand Kick, Full Left Turn, Side Leaning Rest, Grapevine, Cross Leg Squad, Knee Jump to Feet, and Russian Dance were selected. Each athlete was given two opportunities during the test and was evaluated by using points as the criteria.

III. RESULTS

TABLE I. INDICATING SIGNIFICANT DIFFERENCE BETWEEN PRETEST AND POST-TEST RESULTS IN TERMS OF INFLUENCES ON FOOTBALL SKILLS

No	High Motor Educability Group					
	Drill			Tactical		
	Pretest	Posttest	Difference	Pretest	Posttest	Difference
1	36.21	32.85	3.36	41.82	40.14	1.68
2	38.60	35.11	3.49	44.33	42.30	2.03
3	38.53	36.12	2.41	46.65	43.50	3.15
4	40.81	38.04	2.77	50.05	46.04	4.01
5	33.15	30.04	3.11	41.40	40.38	1.02
6	46.94	40.67	6.27	43.90	41.02	2.88
7	41.42	39.44	1.98	52.61	50.80	1.81
8	46.26	44.05	2.21	52.98	50.12	2.86
Total	321.92	296.32	25.60	373.74	354.30	19.44
No	Low Motor Educability Group					
	Drill			Tactical		
	Pretest	posttest	Difference	Pretest	Posttest	Difference
1	48.10	45.72	2.38	56.36	53.42	2.96
2	56.53	53.30	3.23	55.30	52.22	3.08
3	41.07	40.50	0.57	43.22	41.12	2.10
4	50.41	49.33	1.08	40.99	40.40	0.59
5	46.10	44.22	1.88	42.75	42.43	0.32
6	42.64	39.21	3.43	49.91	48.31	1.60
7	52.42	50.40	2.02	52.26	49.82	2.44
8	57.04	54.20	2.84	51.06	48.48	2.58
Total	394.31	376.88	17.43	391.85	376.20	15.67

TABLE II. THE ANOVA RESULTS OF EXPERIMENT GROUP USING DRILL AND TACTICAL TRAINING METHODS

Source	Type III Sum of Square	df	Mean Square	F	Sig
Drill & Tactical	102,603	1	102,603	4,304	0,047

Referring to results shown in Table II, the ρ significance level is $0.047 < 0.05$. Therefore, there are significant differences between drill and tactical training methods in terms of influences on football skill. The analysis results indicate that drill training method yields better results with average pretest score of 25.60 and average post-test score of 17.43 compared to the average pretest score of 19.44 and average post-test score of 15.67 in tactical training method. Based on the results, research hypothesis stating that significant difference between drill and tactical training methods exists in terms of influence on football skill of football school athletes aged 14-15 is accepted.

TABLE III. THE ANOVA RESULTS INDICATING DIFFERENCES BETWEEN HIGH AND LOW MOTOR EDUCABILITY.

Source	Type III Sum of Square	df	Mean Square	F	Sig
Motor Educability	328,064	1	328,064	13,762	0,001

Referring the results shown in Table III, ρ significance level is $0.001 < 0.05$. In other words, there are significant differences between athletes with high motor educability and those with low motor educability in terms of influences on football skill. Based on the analysis results, athletes with high motor educability (average scores of 25.60 and 19.44) perform better than those whose motor educability is low (average scores of 17.43 and 15.67). In short, research hypothesis stating that significant difference exists between athlete with high motor educability and those with low motor educability in terms of influence on football skill among football school athletes aged 14-15 is accepted.

TABLE IV. RESULTS OF INTERACTION BETWEEN DRILL AND TACTICAL TRAINING METHODS WITH HIGH AND LOW MOTOR EDUCABILITY

Source	Type III Sum of Square	df	Mean Square	F	Sig
Drill & Tactical* Motor Educability	107,531	1	107,531	4,511	0,043

Table IV presents a ρ significance level of $0.043 < 0.05$. Referring to the above numbers, research hypothesis stating that significant interaction exists between training methods (drill and tactical) and motor educability (high and low) in terms of influence on football skill among football school. Figure 2 depicts pretest and posttest football skills bar chart.

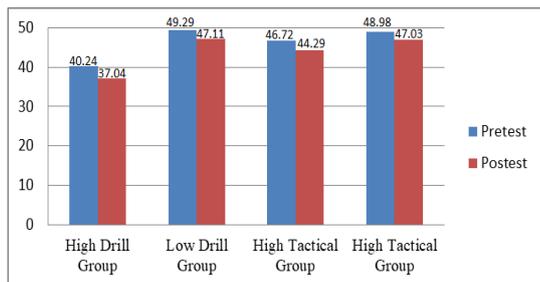


Fig. 2. Pretest and Posttest Football Skills Bar Chart

IV. DISCUSSION

During the process, all four groups were given treatment in two months period. As a result, football skills of the athletes aged 14-15 participating in this research improved significantly. According to Table. 4, the skills of groups with high motor educability and drill training method improved significantly compared to the skills of groups with low motor educability and tactical training method (p significance level of $0.043 < 0.05$). As a result, drill and tactical training methods influence football skills of athletes aged 14-15 differently. Basically, drill training method focuses on the intended training through repetition of movement based on practical and relevant program with players' skill development [13]. On the other hand, tactical training method focuses on training with pattern. However, if one's goal is to improve football skill, tactical training method should be adopted only on certain occasions to keep focusing on the improvement of football skills. As a support, motor educability plays fundamental roles in measuring one's motor and intelligence level. People whose motor educability is high will master a new movement faster than those with low motor educability as they will get difficulties practicing new movements being trained [14]. Motor educability is extremely needed in both training process and match and is related to how an athlete understands and follows coach's instructions in a match.

A. Effect of Drill Training Methods and Tactical Training Methods on Football Playing Skills

Based on testing the hypothesis it is known that the drill training method and tactical training method have a significant difference in influence on the soccer playing skills of SSB Siginjai Jambi athletes. The difference in this effect was obtained from the results of the use of drill training methods and tactical training methods on the soccer playing skills of SSB Siginjai Jambi athletes. The drill training method has proven to be effective in improving the soccer playing skills of SSB Siginjai Jambi athletes with posttest score of 4.47540 and 5.61320. The results of research conducted by Aprianova obtained in each indicator has increased from the initial indicator 85%, implementation (process) 88.33%, and follow-through 88.33%. The conclusion obtained in this study is that the drill method can improve the basic techniques of dribbling ball of the Putra Zodiac football academy in Bojonegoro [15].

B. Effect of High Motor Educability and Low Motor Educability on Football Playing Skills

The results of the analysis show that athletes who have high motor educability have better football playing skills

than athletes who have low motor educability on the soccer playing skills of SSB Siginjai Jambi athletes. The results of this study are supported by the results of previous studies, namely research conducted by Candra, Sulaiman, and Hidayah, there are differences in influence between SSB players who have high and low motor educability abilities on the results of basic football technical training. This can be seen from the results of the group of Camar Mas Jaya SSB players who have high motor educability ability, it is found that $F_{count} = 12.804$ while F_{table} at the 0.05 significance level is obtained at a price of 4.11. The price of F calculated is greater than the price of F_{table} ($F_{count} > F_{table}$), it can be concluded that there is a difference between the ability of high and low motor educability to the results of basic football technical training [16].

C. Interaction between Exercise Methods (Drill and Tactical) with Motor Educability (High and Low)

The results of the research that have been stated in the results of this study that there are significant interactions between training methods (drill and tactical) with motor educability (high and low) on the soccer playing skills of SSB Siginjai Jambi athletes. This research is supported by previous research. Research conducted by Lesmana states that there is an interaction between training methods and motor educability on dribbling skills in soccer. The results show the opposite, tactical training methods are equally applicable to athletes who have low educability motors. This is reinforced by the results of further tests that distinguish between drill training methods and those that have high educability motors and tactical training methods with those that have high educability motors. In other words, the effectiveness of drill training methods with high educability motors is significantly better than tactical training methods [17].

V. CONCLUSION

This research shows that the implementation of drill and tactics training methods have different significant influences on football skill among football school athletes aged 14-15. This finding indicates that drill training method is considered more appropriate for improving football skill. It has been proven that drill training method, while also supported by strong motor educability skill, significantly influences football skill among football school athletes aged 14-15. In conclusion, the aforementioned components have become a successful and right formula for improving football skill.

REFERENCES

- [1] Haugen, T., Seiler, S. (2015). Physical and physiological testing of soccer players: why, what and how should we measure?. *Journal Sport Science*, 19, 10-26.
- [2] Huijgen, B.C.H. (2013). *Technical skills, the key to succes? A study on talent development and selection of youth soccer players*. Groningen: Gildeprint Drukkerijen, Enschede.
- [3] Hyballa., P & Poel, H.D. (2012). *Dutch soccer secrets: playing and coaching philosophy-coaching-tactics-technique*. UK: Sport Publishers Association (WSPA). Translated by Heather Ross.
- [4] US Youth Soccer Education Department. (2012). *Us youth soccer development model*. February 2012. 55 US Youth Soccer State Association Technical Directors and the U.S. Soccer Technical Advisors.

- [5] McCloy, C.H. (2014). An analytical study of the stunt type test as a measure of motor educability. *Research Quarterly. American Physical Education Association*, 8(3), 46-55.
- [6] Khacharem, A., Zoudji, B., & Ripoll, H. (2013). Effect of presentation format and expertise on attacking-drill memorization in soccer. *Journal of Applied Sport Psychology*, 233-248.
- [7] World Class Coaching. (2011). *Complete soccer coaching guide: 50 soccer drills, exercises and tips for better coaching*. Thousands of Training Sessions at www.worldclasscoaching.com.
- [8] Collins, K.G., & Olsen, E.B. (2010). Implementing a tactical games approach with sport education. *Journal of Physical Education, Recreation & Dance*, 81(3), 36-42.
- [9] Pritchard, T., & Collum, S. (2013). The sport education tactical model. *Journal of Physical Education, Recreation & Dance*, 80(9), 31-38.
- [10] Jordan Loader, Paul G. Montgomery, Morgan D. Williams, Christian Lorenzen, and Justin G. Kemp. (2012). *International Journal of Sports Science & Coaching*. 7(1), 57 – 67.
- [11] Kannekens, R., Gemser, T.E., & Visscher, C. (2009). Tactical skills of world-class youth soccer teams. *Journal of Sports Sciences*, 27(8), 807-812.
- [12] Subagyo, I. (2010). Guidelines for the implementation of "david lee" skill tests for football school 14-15 year olds. *Thesis*. Yogyakarta: UNY.
- [13] Diment, G.M. (2014) Mental skills training in soccer: A Drill-based Approach. *Journal of Sport Psychology in Action*, 5(1), 14-27.
- [14] Karkare, A.Y. (2015). Effect of motor educability and tribal and non tribal belongingness on physical skills of male players. *Research journal of recent sciences*, 4, 162-164.
- [15] Aprianova, F. Hariadi, I. (2016). The drill method is to improve the basic techniques of dribbling in football games for students of the Zodiac Football School of Bojonegoro District, aged 13-15 years. *Sports Coaching Journal*, Vol. 1, No. 1, October 2016, 63-74.
- [16] Candra, R.D. Sulaiman, Hidayah, T. (2016). The effect of training methods and the ability of motor educability on the results of basic football training techniques. *Journal of Physical Education and Sports*. 4 (2). 159-164.
- [17] Lesmana, S.A. (2015) Effect of training methods and educability motors on dribbling skills in football. *Thesis*, unpublished, Jakarta State University, Jakarta.