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The Roles of Kinesthetic Perception, Adaptation, and Agility in the Football Skills of Football School Students in Bandung City

ABSTRACT: Great attention to football is not only paid by adults, but also children. For children, football has even been their part of life; in other words, their world is incomplete without football. This condition shows that football, as a sport game, has been an important aspect among children. Children's great interest in football has encouraged football lovers to help channel the interest by founding the Football Schools, or famous by the abbreviation of SSB (Sekolah Sepak Bola) in Indonesian context. The purpose of this research is to study the contribution of kinesthetic perception, adaptation, and agility to football skills. This research was conducted at the Football Schools in Bandung with a sample of 40 students selected randomly. The research has found that there were positive correlations between: (1) kinesthetic perception and football skills; (2) adaptation and football skills; (3) agility and football skills; and (4) kinesthetic perception, adaptation, and agility with football skills. The findings give an implication that football skills can be increased by improving kinesthetic perception, adaptation, and agility.

KEY WORD: Football schools in Bandung, students, kinesthetic perception, adaptation, agility, football skills, and positive correlations.

INTISARI: "Peranan Persepsi Kinestetik, Adaptasi, dan Kelincahan terhadap Keterampilan Sepakbola pada Siswa-siswa Sekolah Sepakbola di Kota Bandung". Besarnya perhatian terhadap sepakbola tidak hanya dimiliki oleh orang-orang dewasa, tetapi juga anak-anak. Bahkan bagi anak-anak, sepakbola telah menjadi bagian dari hidupnya; dengan kata lain, tidak ada dunia lain tanpa melakukan sepakbola. Keadaan ini menunjukkan bahwa sepakbola, sebagai olahraga permainan, telah menjadi agenda penting bagi kalangan anak-anak. Besarnya perhatian anak-anak terhadap sepakbola mendorong pencinta sepakbola untuk membantu menyalurkan keinginan tersebut dengan cara mendirikan Sekolah-sekolah Sepakbola, atau yang terkenal dengan singkatan SSB (Sekolah Sepak Bola) dalam konteks Indonesia. Tujuan dari penelitian ini adalah untuk mempelajari kontribusi persepsi kinestetik, adaptasi, dan kelincahan untuk keterampilan sepakbola. Penelitian ini dilakukan di Sekolah-sekolah Sepakbola di Bandung dengan sampel 40 siswa yang dipilih secara acak. Penelitian telah menemukan bahwa ada korelasi positif antara: (1) persepsi kinestetik dan keterampilan bermain sepakbola; (2) adaptasi dan keterampilan bermain sepakbola; (3) kelincahan dan keterampilan bermain sepakbola; serta (4) persepsi kinestetik, adaptasi, dan kelincahan dengan keterampilan bermain sepakbola. Temuan memberikan implikasi bahwa keterampilan bermain sepakbola dapat ditingkatkan dengan memperbaiki persepsi kinestetik, adaptasi, dan kelincahan.

KATA KUNCI: Sekolah sepakbola di Bandung, siswa-siswa, persepsi kinestetik, adaptasi, kelincahan, keterampilan sepakbola, dan korelasi positif.

INTRODUCTION

Football is a very popular game in the world, with more than 200 millions people, both adult and children, male and female,

practicing this sport (Luxbacher, 1996:5). This popularity is due to several things: *firstly*, football can be done anywhere, on various types of surface, and in any kind of

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weather; *secondly*, football is not only played by adults but also children, both male and female (regardless of gender); and *thirdly*, anyone who plays the sport only needs a ball made of any material that can be kicked, even a ball made of can is possible (Spindler & Ward, 1990:4).

Another reason causing football to be popular is because there are elements of techniques involved, such as kicking, controlling, heading, dribbling, and the like. These elements are not only interesting but also stimulating, both for those who play and watch the sport. In order to master the techniques, a player should train well, regularly, progressively, and continuously up to the most difficult level. Training should begin with technique mastery, followed by team cooperation and eventually practice in the real game.

Great attention to football is not only paid by adults, but also children. For children, football has even been their part of life; in other words, their world is incomplete without football. This condition shows that football, as a sport game, has been an important aspect among children. Children's great interest in football has encouraged football lovers to help channel the interest by founding Football Schools, or famous by the abbreviation of SSB (which stands for *Sekolah Sepak Bola*) in Indonesian context. This kind of school is a medium for the development of football for children, aiming to improve football skills in general; the school is simultaneously a medium to cultivate interest in football among children.

However, nowadays, the roles of football school in supporting the optimum achievements at both national and international levels have not been perceived. Field observation reveals that there are still a small number of both regional and national football athletes who have been trained in football schools. This fact leaves an impression that football schools have not contributed significantly towards Indonesian football.

As previously mentioned, there are several basic techniques in football that should be mastered by its players, such as kicking, controlling, dribbling, and the like.

These skills are a series of actions or tasks that in their practice require deliberate body movements in order to meet a certain goal (Magill, 1995:7). Football skills are also supported by several other aspects, such as techniques, physical condition, tactics, strategies, and mental readiness. Technical ability can be defined as the ability to complete a task or solve a problem through the easiest way. It can also be defined as the foundation to display a certain skill (Thompson, 1991:61).

To perform a technique well and correctly requires the performance of a certain nervous system that is tightly linked to one's sense of the object he/she plays. It is this sense that is called kinesthetic perception or awareness of body position during movement. Kinesthetic perception is important to control movements more accurately (Harsono, 1988:224). After making a technical error, a child with good kinesthetic perception will immediately be aware of the error. In other words, the perfection of a technique usually can only be performed by one who is able to detect a certain movement pattern most quickly; and this person is regarded as one having good kinesthetic perception.

Improvement in techniques should also be accompanied by improvement in physical condition. Physical condition includes *biomotor* abilities, such as strength, speed, resilience, and coordination (Bompa, 1994:259). Physical factors are required in order to gain the highest achievements; therefore, they have to be well prepared and given importance in training.

Agility is one of the physical factors, which when combined with other factors, will result in a quick and quality movement (Bompa, 1994:260). Hence, agility is really needed and linked to the mastery of football skills. In addition to physical factors, to optimize football skills requires one to pay considerable attention to tactics and strategies. Tactical mastery is a determining factor of success in sport. Almost all athletes at advanced level have the same techniques, but the winner is the one with good tactics (Bompa, 1994:59).

Another equally important factor is mental readiness. It is defined as the preparedness to react to a certain object (Sudibyo, 1993:30). Mental development is not less important than that of the physical, technical, and tactical aspects, for if mental does not develop accordingly, it will be impossible to achieve higher (Harsono, 1988:101). Mental development will help in developing psychological abilities to achieve optimal performance, increase satisfaction in sport, develop memory, improve performance, and actualize the existing potentials. Mental development should be oriented at children's ability in adapting to their environment and lessons.

Adaptation pertains to children's ability in adjusting themselves to the environment where they train. A child who is able to adapt is enabled to master all aspects supporting his/her achievements. Adaptation is begun with adjustment to: *firstly*, the learning environment, in this case is interaction with children's classmates; and *secondly*, to the work and training. Children who can adjust to their practice will be able to easily accept all training materials well. The training here means one involving the physical, technical, tactical, and strategic, as well as mental development.

From the above explanations, there seems to be a strong correlation between football skills and several important elements, such as kinesthetic perception, adaptation, and agility. Nevertheless, whether these elements have interconnection with each other will be highly determined by a scientific approach through relevant and accurate analysis.

So, the problems under research are formulated in the following questions: (1) Is there any contribution of Kinesthetic Perception to the Football Skills of football school students?; (2) Is there any contribution of Adaptation to the Football Skills of football school students?; (3) Is there any contribution of Agility to the Football Skills of football school students?; and (4) Is there any contribution of Kinesthetic Perception, Adaptation, and Agility simultaneously to the Football Skills of football school students?

LITERATURE REVIEW

Richard A. Magill explained that skill is an action or a task deliberately performed in order to meet a specific goal (Magill, 1995:7). Similarly, Richard A. Schmidt defined skill as the ability to achieve a final result optimally using minimum energy and time. He further elaborated the key characteristics of skills: *Firstly*, a skill is performed to meet certain desired goals. *Secondly*, a skill is a combination of the expected target and final result obtained maximally; in other words, the meeting of a maximum goal should be done with minimum time. *Thirdly*, a skill is minimizing energy use, both physical and mental (Schmidt, 1991:3-9). From the above explanations, it can be synthesized that a skill is one's ability in performing certain activity involving body movements in a deliberate manner in order to meet a goal or to achieve something using energy and time as efficiently as possible.

Meanwhile, in relation to football, Richard L. Nelson (1983a) noted that football is a game ultimately played using the feet. In addition to the feet, other parts of the body that can be used to achieve a certain basic football skill are the head, chest, thighs, and lower limbs. Exception applies to the goal keeper who can use both of his or her arms and hands to prevent other players from successfully sending the ball to his or her goal. The game starts from the middle line surrounded by a circle marking the spot, where the first kick of the ball takes place. It is played by two teams, with each team consisting of eleven players trying to kick the ball into each other's goal in order to win (Nelson, 1983a:1).

From the definitions, it can be inferred that football skill is the ability to perform an activity, which in this case is football game, involving deliberate body movements (the head, chest, stomach, thighs, lower limbs, except for the goal keeper) in order to meet a certain goal or to get an achievement, namely to win the game by kicking the ball into the opponent team's goal and defending their own goal from the opponent's attack, using energy and time as efficiently as possible.

About the Kinesthetic Perception.

The success of a performance frequently depends at large on the performer's effectiveness in detecting, perceiving, and using relevant sensory information. Oftentimes, the winner of a match is one who detects his or her opponent movement pattern the quickest. Based on its sources, information can be classified into two, namely *exteroceptive* information (obtained from the external source) and *proprioceptive* information (coming from the internal source).

Exteroceptive information originates from two sources, namely vision and hearing. Vision provides information about object movement in the environment, as well as detecting one's own movement. Meanwhile, although hearing or audio's role is not equally clear in football skill, just like vision there are so many activities relying on the skill of well-developed hearing. Another type of information is *proprioceptive* information, which is information from body movement.

Proprio denotes information from inside the body, such as joint position, muscle strength, internal spatial orientation that is in a reverse condition for instance and the like. Such a form of information is commonly called "kinesthetic". *Kines* means movement, while *thesis* means sense. Hence, "kinesthetic" means the sensation of movement. This definition refers to a collection of sensory information coming from one's own body concerning joint position, movement, muscle tension, and orientation inside a space (Schmidt, 1991:46).

Linguistically, the phrase Kinesthetic Perception is formed by two words, namely *kinesthetic* and *perception*. *Kinesthetic* means having the properties of being capable in getting aware of muscle movement. Meanwhile, *perception* means a response or process of knowing through the five senses. IQEQ (Intelligence Quotient and Emotional Quotient) defined *perception* as the result of an interaction between two factors, namely sensory stimulations directed at an individual and the influencing factors regulating or repelling the stimulations

intra-psychically. The influencing factors can be biological, social, and psychological in nature. Due to a process of mutual influence among the factors, in which association is formed within, a certain interaction with psychological properties takes place (<http://www.iqeq.web.id/art/art11.shtml>, 15/2/2015). When the two terms are combined, it seems that *kinesthetic perception* can refer to the response or ability to know and be aware of muscle movements through the five senses.

Kinesthetic perception is also called kinesthetic sense, which means sensory input taking place within the body. Body attitude and movement information are communicated through a sensory system by the stretching of the muscles inside the body. Even in a quiet mode, kinesthetic sense can monitor body position (Dai, 1998). Thus, kinesthetic sense is a function of human organs that have great contribution to body movement.

A more operational definition of kinesthetic perception defines it as the ability to take body positions and movements, as well as the body parts (Johnson & Nelson, 1977:60). Similarly, Harsono (1988) noted that kinesthetic is a sense that provides us with the awareness of our body position or parts of the body, while moving/being in the air. He also mentioned that it is because of the sense that we can control our movements more accurately (Harsono, 1988:224).

This definition echoes that proposed by A.D. Philips & J.E. Hornak (1979:252), who stated that kinesthetic perception is the ability to sense body position and its parts in space. Quoting Singer, Ted Baumgartner & S.A. Jackson (1995) expressed similar idea concerning kinesthetic perception, namely it is the ability to sense body position and its other parts in a space (air). Finally, Harold M. Barrow & Rosemary McGee (1979:115) added that an individual's ability to control movements accurately is prompted by the information that his or her sense receives. This sense comes from the receptors located in the muscle, fascia, tendon, and joint.

From the above explanations, it can be concluded that *Kinesthetic Perception* is the

sensation arises, when there is stimulation from muscle receptor, muscle fascia, tendon, and joint, acting as a feedback mechanism that gives an individual an awareness of body position or parts of the body in controlling movements to be more precise or accurate.

About the Adaptation. Adaptation is self-adjustment to the social environment, the work or the lesson. In this regard, Neil R. Carlson & William Buskist (1997:339) defined adaptation as self-adjustment to the environment through attitudes and skills. Meanwhile, Alexander A. Schneiders (1955:171) argued that adaptation is determined by how one can interact with oneself and others or the social environment in general, which can be regarded as the reflection of whether the person can make a good adjustment or not.

Harrison H. Clarke & David H. Clarke (1987) added that in addition to having the desire to survive, one has to struggle to meet the social demands, and this is called self-adjustment. Finally, F. Moskowitz (1969:30) defined adaptation as the contribution used to include individual behaviors, especially one leading to the understanding that is made by the individual as the basis for consideration of the needs, motives, and habits.

Adjustment to the social environment can be defined as one's attitude or capabilities in adjusting him or herself to the social environment, the place where he/she works, or the place where he/she learns. The adjustment is determined by one's ability to interact well with others. The responses to others or the social environment in general are viewed as a reflection of whether one can adjust well or not. Adjustment to the environment can also mean one's ability in adjusting his or her body to the weather, spatial position, and geographical position.

Meanwhile, adjustment to work can be defined as one's ability in adjusting him or herself to his or her job. This can be defined, firstly as one's ability to regulate and position oneself in his or her duty and responsibility as a worker. Secondly, the person can position him or herself as a social being that should interact with his or her

colleagues. Finally, adjustment to learning/lesson is one's ability to adjust him/herself to the learning materials that he/she gets. This ability is important, especially for children, because those who can adjust themselves with their learning will easily understand the materials given in-depth.

In this regard, Jean Piaget (as cited in Phillips, 1969) explained that knowledge development is a spontaneous process that considers biological and psychological factors of the body as a whole, such as nervous system and mental function. Meanwhile, knowledge structure is a nervous structure that changes systematically in line with experience and growth. It is these functions that allow for knowledge to develop in the same process. These functions are specific and determining in the human process of regulating interaction with the environment. Some of these functions, that share similar importance, are adaptation, organization, and balance (Wilson, Robeck & Michael, 1997:357).

Hence, it can be inferred that adaptation is self-adjustment shown by one's good ability in interacting with him or herself and others, either in the social, professional, and learning environment, through his or her good attitude and capabilities.

About the Agility. Ted Baumgartner & S.A. Jackson (1995:237) noted that agility is the ability of the body and its parts in changing direction quickly. It is closely linked to running speed. A similar opinion is put forward by Iwan Setiawan *et al.* (1997), who expressed that agility is one's ability to change direction quickly and precisely during one's movement without losing balance and awareness of the body position; therefore, without good agility and flexibility, one cannot move briskly (Setiawan *et al.*, 1997:116).

In the same vein, Harsono (1988:171) evinced that agility is the ability to change body direction and position quickly and accurately while moving, without losing balance and awareness of the body position. In addition, Harold M. Barrow & Rosemary McGee (1979) asserted that the factor most influencing movement is agility. They

defined agility as the ability of the body or parts of the body to change direction suddenly and accurately (Barrow & McGee, 1979:123). Training of agility can be done by means of the following: (1) Shuttle run, (2) Zigzag run, (3) Squat thrust and its modification, and (4) obstacle run (Barrow & McGee, 1979:172-173).

Meanwhile, C.H. McCloy & N.D. Young (1954) explained that the agility tests that can be used to measure several aspects involving major movements are: *Squat thrust, Right boomerang test, Forty yard maze run test, Loop-the-loop test, Zigzag run, Dodging run, Side step test, and Auto-tire test* (McCloy & Young, 1954:75-82).

From the above explanations, it can be summed up that agility is one's ability in coordinating neuromuscular movements in sport, ultimately in changing direction quickly and accurately, smoothly, and with fluid motion and balance without losing the balance, and awareness of the body position.

Contribution of Kinesthetic Perception to Football Skills.

Mastering football techniques is the desire of all players. In order to master these techniques, in addition to having a good physical condition, a player has to have good kinesthetic perception. For instance is when one aims to pass the ball with an inside-of-foot passing, which is the most basic pass that is called push pass. In doing this push pass, there are some requirements and directions. *Firstly*, the player has to know how to pass. The pass starts by positioning the supporting foot beside the ball, then kick the ball using the kicking foot. *Secondly*, strike the ball in the desired direction. These directions can be easily performed by a player with good kinesthetic perception (Qomariah, 1998).

However, for those whose kinesthetic perception is not good, it will not be that easy. The most important role of kinesthetic perception here is when the player fails to do the pass as he/she desires. For instance, the ball is wide of the mark, either to the left or right side, or the kick is too hard, while the target distance is only between 5 and 15 meters. In this case, a player with good

kinesthetic perception can immediately be aware of the mistake.

Another example is when the player fails to head the ball to the goal, and then if he/she has good kinesthetic perception, he/she will easily know the mistake. The ability to be aware of and correct a mistake such as this is inseparable from the *proprioceptor* role in the brain. *Proprioceptor* is a sensory receptor located in the vestibular apparatus in the inner ear, muscle, tendon, and joints, which can change kinesthetic perception to be very sensitive.

Thus, the higher the kinesthetic perception, the more accurate the information provided. Consequently, the more accurate the information, the more accurate the correction for movement error. Hence, it can be assumed that *kinesthetic perception has a positive contribution to football skills.*

Contribution of Adaptation to Football Skills. To gain sport skills and achievements requires several aspects, such as physical, technical, tactical, and mental aspects. The four aspects should be supported by biomotor skills, such as resilience, flexibility, strength, power, and speed. However, the application of these aspects in the real sport performance should also be supported by other elements, such as the ability to adapt. The ability to adapt can be directed at the environment, work, and lesson.

With regard to the context of this research, it seems that adaptation to the environment, work, and lesson is an issue. A child's ability to adapt to his or her environment means that he/she has the opportunity to adjust him or herself to the social, cultural, and geographical conditions. The ability to adjust to the social condition allows the child to interact with his or her peers.

In the case of the teaching and learning of football in football schools, the child will be able to easily interact with his or her classmates. The child's smooth adaptation to geographical condition prompts him or her to get used to the weather in his or her place. His or her ability in adapting to the lesson

will be an advantage for the educators, as it allows the child to master important aspects in football. For example, a child who is good at adapting to his or her lesson will easily understand and master various skills he/she is trained with in the school.

In football games, cooperation is needed among team members. In order to cooperate, there should be emotional ties among the members. A child will easily cooperate if he/she has appreciation and respect for the truth coming from other members of his or her team. Furthermore, a player is required to have football skills, so that a player who is good at adapting to the lesson will be able to cooperate with his or her mates (Nelson, 1983b).

Hence, a child's ability to adapt to the environment will greatly help in the attempt of acquiring the best football techniques. In this regard, it can be assumed that *social adaptation has a positive contribution to the mastery of football skills.*

Contribution of Agility to Football Skills. One's ease in applying his or her basic techniques is dependent upon one's agility. To acquire good agility, high speed, flexibility, and balance are needed. The supporting factors are considered as compulsory *biomotor* skills for football players. Therefore, agility is tightly linked to football skills. For instance, in order to do dribbling, a player has to be able to run quickly, and if the opponent player blocks the player, then the player has to be able to trick the opponent by changing direction quickly.

Another example is shown by a goal keeper who can easily anticipate the coming ball if he/she has high agility level. Then, it can be concluded that agility has a strong contribution to football skills. To put it in another way, it can be assumed that *agility has a positive contribution to the mastery of football skills.*

Contributions of Kinesthetic Perception, Adaptation, and Agility to Football Skills. To acquire high-level football skills, several things are needed, one of them is a strong and healthy body. In other words, a player must have high

biomotor abilities. The abilities are shown in strength, resilience, speed, coordination, and flexibility. The combination of speed, coordination, and strength will result in agility. Agility is highly needed in football games, especially in the application of basic techniques into the real game.

However, physical aspects are not the only requirements in football games because without other supporting factors, it is impossible that the *biomotor* skills will be performed well. One of the supporting factors is kinesthetic perception. As previously defined, it is one's ability to sense the position and movements of his or her body parts in space while performing or moving, based on other information than the visual, audio, and verbal.

In addition, a player who has good kinesthetic perception will have the ability to self-introspect for his or her own mistakes. This ability, though, must be supported by the ability to adapt, because the latter is very important to reach the dream of being a good football player. A child who has the ability to adapt will easily do the training activities and able to cooperate with the team.

Hence, the hypothesis is formulated this way that *there is a positive contribution of kinesthetic perception, adaptation, and agility towards the mastery of football skills.*

HYPOTHESES AND METHOD

From the above discussion, four hypotheses are formulated as follows: (1) There is a contribution of Kinesthetic Perception to the Football Skills of football school students; (2) There is a contribution of Adaptation to the Football Skills of football school students; (3) There is a contribution of Agility to the Football Skills of football school students; and (4) There is a simultaneously positive contribution of Kinesthetic Perception, Adaptation, and Agility to the Football Skills of football school students.

The population and sample of this research consisted of football school students in Bandung City. Sample was taken using two-stage random sampling, where the first stage of sampling was done with purposive

Table 1:
ANOVA Table for Significance Test for Linear Regression Equation $\hat{Y} = 17.64 + 0.65X_1$

Source of Variation	DF	SS	MS	F _{count}	F _{table}	
					0.05	0.01
Total (T)	40	102728.2				
Regression (a)	1	100001	100001			
Regression (b/a)	1	1634.28	1634.28	56.82**	4.10	7.35
Residual (R)	38	1092.93	28.76			
F Value (F)	28	814.42	29.09	1.04 ^{ns}	3.03	2.19
Error (E)	10	278.51	27.85			

Notes:

** = Very Significant ($F_{count} = 56.82 > F_{table} = 4.04$)

^{ns} = Linear ($F_{count} = 1,04 < F_{table} = 2.7$)

DF = Degree of Freedom

SS = Sum of Squares

MS = Mean Sum of Squares

Table 2:
Correlation between X_1 and Y

Correlation	n	R	r ²	t _{count}	t _{table}	
					0.05	0.01
X_1 and Y	40	0.77	0.60	7.54 **	1.68	2.41

Notes: ** very significant.

sampling, followed by simple random sampling technique. The students sampled for this research consisted of those at the age category of children with beginner level of football skills.

The data collected in this research comprised data of football skills, kinesthetic perception, adaptation, and agility. Data of football skills were obtained through a test battery by Yeagle. Meanwhile, data of adaptation were gained through rating scale questionnaire with a 1-5 range of scores, while data for agility were obtained through zigzag run test (cf Sudjana, 1989; Magill, 1993; and Arikunto, 1999).

RESEARCH RESULTS

Contribution of Kinesthetic Perception (X_1) to Football Skills (Y).

Based on data analysis, the following have been found:

Firstly, there was a contribution of Kinesthetic Perception to Football Skills as indicated by the regression equation of $\hat{Y} = 17.64 + 0.65X_1$ as be displayed in table 1. Based on the significance test for linear regression, the regression equation was

categorized as significantly linear. This means that if the Kinesthetic Perception is increased by one score, then, the Football Skills will increase for as much as 0.65 at the constant of 17.64.

The power of Kinesthetic Perception's contribution to Football Skills was indicated by the correlation coefficient (r_{y1}) equal to 0.77. Meanwhile, the result of the test of significance of the correlation coefficient through *t*-test showed a value of t_{count} equal to 7.54, which was greater than $t_{tab} = 1.68$. Hence, it can be concluded that there was a significantly positive contribution of Kinesthetic Perception to Football Skills.

Based on the correlation coefficient (r_{y1}), the coefficient of determination (r^2) of 0.60 was obtained. This finding signifies that 60% of variations in Football Skills can be explained by variations in Kinesthetic Perception. See table 2.

If Adaptation and Agility are controlled separately, partial correlation coefficients ($r_{y1.2}$) of 0.54 and ($r_{y1.3}$) 0.17, respectively, will be obtained. Furthermore, if control is given to the two independent variables simultaneously, a partial correlation

Table 3:
Summary of Partial Correlation Coefficient Significance Test
between X_1 and Y If X_2 and X_3 are Controlled

Partial Correlation	n	R	t_{count}	t_{table}		
				0.05	0.01	0.005
$r_{y1.2}$	40	0.54	3.84***	1.68	2.42	2.7
$r_{y1.3}$	40	0.17	1.05 ns	1.68	2.42	2.7
$r_{y1.23}$	40	0.21	1.31 ns	1.68	2.42	2.7

Notes: ns means Partial Correlation Coefficient was not significant.

Table 4:
ANOVA Table for Significance Test for Linear Regression Equation $\hat{Y} = 20.20 + 0.60X_2$

Source of Variation	DF	SS	MS	F_{count}	F_{table}	
					0.05	0.01
Total (T)	40	102728.21				
Regression (a)	1	100001.00	100001			
Regression (b/a)	1	1378.63	1378.63	38.85**	4.10	7.35
Residual (R)	38	1348.58	35.49			
F Value (F)	25	1093.12	43.72	2.23 ^{ns}	2.99	2.16
Error (E)	13	255.46	19.65			

Notes:

** = Very Significant ($F_{\text{count}} = 38.85 > F_{\text{table}} = 4.10$)

^{ns} = Linear ($F_{\text{count}} = 2.23 < F_{\text{tab}} = 2.99$)

DF = Degree of Freedom

SS = Sum of Squares

MS = Mean Sum of Squares

Table 5:
Correlation of X_2 and Y

Correlation	N	r	r^2	t_{count}	t_{table}	
					0.05	0.01
X_2 and Y	40	0.71	0.51	6.23**	1.68	2.41

coefficient ($r_{1.23}$) of 0.21 will be derived. Partial correlation coefficient significance test, as presented in table 3, indicated that the partial correlation coefficient was not significant.

Hence, it can be concluded that after controlling Adaptation and Agility, both separately and simultaneously, there was no positive contribution of Kinesthetic Perception to Football Skills.

Secondly, there was a contribution of Kinesthetic Perception to Football Skills as shown by the regression equation of $\hat{Y} = 20.20 + 0.60X_2$ as displayed in table 4. From the significance test for linear regression, the regression equation can be said to be significantly linear. This translated into an understanding that if Kinesthetic Perception

is increased by one score, the Football Skills will rise for as much as 0.60 at the constant of 20.20.

The contribution of Adaptation to Football Skills is shown by the correlation coefficient (r_{y2}) of 0.71. The result of correlation coefficient significance test (r_{y2}) through t-test resulted in t_{count} equal to 6.23 that was higher than t_{table} of 1.68; hence, it can be concluded that there was a very significantly positive contribution of Adaptation to Football Skills.

Based on the correlation coefficient (r_{y2}), coefficient of determination (r^2) was gained for as much as 0.51. This coefficient value meant that 51% of variations in Football Skills could be explained by variations in Kinesthetic Perceptions. See table 5.

Table 6:
Summary of Significance Test for Partial Correlation of X_2 and Y, If X_1 and X_3 are Controlled

Partial Correlation	n	r	t_{count}	t_{table}		
				0.05	0.01	0.005
$r_{y2,1}$	40	0.3506	2.245**	1.68	2.42	2.7
$r_{y2,3}$	40	0.23	1.45ns	1.68	2.42	2.7
$r_{y2,13}$	40	0.2610	1.62ns	1.68	2.42	2.7

Notes: ns means partial correlation coefficient was not significant.

Table 7:
ANOVA for Significance Test for Linear Regression Equation $\hat{Y} = 14.74 + 0.71X_3$

Source of Variation	DF	SS	MS	F_{count}	F_{table}	
					0.05	0.01
Total (T)	40	102728.21				
Regression (a)	1	100001	100001			
Regression(b/a)	1	1679.05	1679.05	60.87 **	4.10	7.35
Residue (S)	38	1048.15	27.58			
F Value (F)	22	735.2	33.41	1.71 ns	2.97	2.14
Error (E)	16	313.03	19.56			

Notes:

** = Very Significant ($F_{count} = 60.87 > F_{tab} = 4.04$)

ns = Linear ($F_{count} = 1,71 < F_{tab} = 2.7$)

DF = Degree of Freedom

SS = Sum of Squares

MS = Mean Sum of Squares

Table 8:
Correlation of X_3 and Y

Correlation	n	r	r^2	t_{count}	t_{table}	
					0.5	0.01
X_3 and Y	40	0.79	0.62	7.8 **	1.68	2.41

Notes: ** very significant.

If Adaption and Agility are controlled individually, partial coefficient correlations ($r_{y2,1}$) of 0.35 and ($r_{y2,3}$) = 0.23, respectively, will be obtained. Then, if control is given to both independent variables simultaneously, a partial coefficient correlation ($r_{y2,13}$) of 0.26 will be obtained. Significance test for partial correlation coefficient such as displayed in table 6 showed that the partial correlation coefficient was not significant.

Hence, it can be inferred that after controlling Kinesthetic Perception and Agility, both individually and simultaneously, there was no positive contribution of Adaptation to Football skills.

Thirdly, there was a contribution of Agility to Football Skills as demonstrated by the regression equation $\hat{Y} = 14.74 + 0.71X_3$ observable in table 7. From significance test

for linear regression, the regression equation could be said to be significantly linear. This fact means that if Kinesthetic Perception is leveled up one score, Football Skills will go up for as much as 0.71 at the constant of 14.74.

The contribution of Agility to Football Skills is indicated by the correlation coefficient (r_{y3}) of 0.79, such as displayed by table 8. The result of correlation coefficient significance test (r_{y3}) through t -test showed that $t_{count} = 7.8$, which was higher than $t_{table} = 1.68$; therefore, it can be concluded that there was a very significantly positive contribution of Agility to Football Skills.

Based on coefficient correlation (r_{y3}), the coefficient of determination (r^2) of 0.62 was obtained. This translated as 62 % of variations in Football Skills could

Table 9:Summary of Significance Test for Partial Correlations of X_3 and Y, If X_1 and X_2 are Controlled

Partial Correlation	N	R	t_{count}	t_{table}		
				0.05	0.01	0.005
$r_{y3,1}$	40	0.2641	1.65 ^{ns}	1.68	2.42	2.7
$r_{y3,2}$	40	0.5139	3.58 ^{**}	1.68	2.42	2.7
$r_{y3,12}$	40	0.1077	0.66 ^{ns}	1.68	2.42	2.7

Notes: ns means correlation coefficient was not significant.**Table 10:**ANOVA for Significance Test for Linear Regression Equation $\hat{Y} = 13.269 + 0.317X_1 + 0.223X_2 + 0.196X_3$

Source of Variation	DF	SS	MS	F_{count}	F_{table}	
					0.05	0.01
Total (T) reduction	39	2727.21				
Regression	3	1779.72	593.2	22.54 ^{**}	2.8	4.4
Residue (R)	36	947.49	26.32			

Notes:^{**} = Very Significant ($F_{\text{count}} = 22.54 > F_{\text{tab}} = 2.8$)

DF = Degree of Freedom

SS = Sum of Squares

MS = Mean Sum of Squares

Table 11:Double Correlation of $R_{y,123}$

Correlation	n	$R_{y,123}$	$R^2_{y,123}$	F_{count}	F_{table}	
					0.05	0.01
$R_{y,123}$	40	0.81	0.653	22.54 ^{**}	2.80	4.38

Notes: ^{**} very significant.

be explained by variations in Kinesthetic Perceptions. If control is given to Kinesthetic Perception and Adaptation individually, then partial correlation coefficients ($r_{y3,1}$) of 0.26 and ($r_{y3,2}$) 0.51 will be obtained, respectively. Then, if both independent variables are controlled simultaneously, partial correlation coefficient ($r_{y3,12}$) of 0.11 will be gained.

Results of the significance test for partial correlation coefficient are presented in table 9, which showed that the partial correlation coefficients were not significant. Thus, it can be concluded that after controlling Kinesthetic Perception and Agility, both individually and simultaneously, it was found that there was a positive contribution of Agility to Football Skills.

Fourthly, Kinesthetic Perception, Adaptation, and Agility simultaneously contributed to Football Skills as proved by the regression equation of $\hat{Y} = 13.269 +$

$0.317X_1 + 0.223X_2 + 0.196X_3$ as presented in table 10. From the significance test for multiple regression, it was found that the multiple regression coefficient was very significant.

The multiple correlation coefficient of Kinesthetic Perception, Adaptation, and Agility simultaneously and Football Skills was $R_{y,123} = 0.81$. Results of significance test demonstrated that the double correlation coefficient was very significant. Therefore, it can be inferred that Kinesthetic Perception, Adaptation, and Agility simultaneously positively contributed to Football Skills.

Analysis results also showed that the coefficient of determination $R^2_{y,123} = 0.65$. This translated as 65% of the variations in Football Skills being determined by Kinesthetic Perception, Adaptation, and Agility simultaneously. See table 11.

CONCLUSION

After several stages of research, it was found that Kinesthetic Perception, Adaptation, and Agility, both individually and simultaneously, had very significantly positive contribution to Football Skills. It was also revealed that the better the Kinesthetic Perception, Adaptation, and Agility, the better the Football Skills will be.

On the other hand, the lower the Kinesthetic Perception, Adaptation, and Agility, the lower the Football Skills. Thus, Football Skills can be improved by improving Kinesthetic Perception, Adaptation, and Agility. Consequently, efforts should be made to improve Kinesthetic Perception, Adaptation, and Agility in order to improve Football Skills.

Based on the above findings, conclusion, and research implications, the following are recommended:

Firstly, in an attempt of improving kinesthetic perception of football players, football coaches and supervisors should continuously monitor the development of players' kinesthetic perception from the beginner to the advanced level.

Secondly, similar to that of kinesthetic perception, in order to improve football players' skills, coaches and supervisors should perpetually pay attention to and encourage the ability of the players to adapt from the beginner to advanced level.

Thirdly, although research results showed that agility and football skills had significant correlation coefficient, because the results of partial correlation coefficient calculation showed that the correlation was not significant, training on agility should not be given exclusively. Hence, it is suggested that training on agility is given by combining various skills, such as using the ball directly. However, further research is needed on this matter.

Fourthly, research results showed that kinesthetic perception, adaptation, and agility simultaneously significantly contributed to football skills. Hence, the efforts of improving football skills should ideally be approached from the three factors simultaneously from the beginning to advanced level.

Fifthly, the three factors (kinesthetic perception, adaptation, and agility) are not the sole determining factors in improving football skills. There are still other factors equally affecting the skills. Therefore, other physical components, such as strength, flexibility, and explosive power should be trained and improved continuously and simultaneously. In addition, the "mind" factors, such as intelligence, talent, and logics should be taken into account when providing training in order to find the effective ways of transferring football knowledge and skills. Finally, the "soul" factors, such as interest, motivation, and desire, should equally be considered, so that training can run well and gain the expected results.

Sixthly, the research was conducted to children who were in general still at the beginner levels and had not acquired higher skills. Hence, it is recommended that future researchers can conduct further research, especially among advanced level players.

Seventhly, quality regional football matches should be increased, in order to create competitive atmosphere that is very stimulating, and eventually growing the motivation to achieve and to support the improvement of football skills. This is so, for without regular competition, the goals will be difficult to realize and improved.¹

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¹**Statement:** I wish to make an assurance that my paper is an original work by my own self, it is not a product of plagiarism and as well as not submitted and published in other scholarly journal.

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Football School Students in Indonesia

(Source: www.google.com, 15/2/2015)

Great attention to football is not only paid by adults, but also children. For children, football has even been their part of life; in other words, their world is incomplete without football. This condition shows that football, as a sport game, has been an important aspect among children. Children's great interest in football has encouraged football lovers to help channel the interest by founding Football Schools, or famous by the abbreviation of SSB (which stands for *Sekolah Sepak Bola*) in Indonesian context. This kind of school is a medium for the development of football for children, aiming to improve football skills in general; the school is simultaneously a medium to cultivate interest in football among children.