

Analysis of the Skill Performance Variables on Playing Ability Among Youth Soccer Players

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Abstract— Aim: The purpose of the present investigation was to analyse the influence of selected skill performance variables with the playing ability of the youth soccer players of forward playing position. **Method:** Twenty male soccer players (forwards) from Puducherry Union Territory, India, age ranged between 19 and 21 years were selected by random sampling technique (n=20). To assess the playing ability of the subjects, the rating technique was followed by using three experienced soccer coaches. The skill performance (short pass, long pass, foot receiving and passing, thigh receiving and passing, chest receiving and passing, Defensive heading, attacking heading, dribbling and shooting) was quantified by adopting appropriate tests. The test reliability was established by the investigator by test retest method for 5 soccer players. Pearson's correlation (2-tailed) and stepwise multiple regression were used to analyse and conclude the study. **Result:** Among the selected skills, foot receiving and passing ($r= 0.615$, $p<0.05$), thigh receiving and passing ($r= 0.519$, $p<0.05$), and shooting ($r= 0.654$, $p<0.01$) had significant relationship with the soccer playing ability of forwards. The 91.4% of playing ability of youth soccer players (forwards) is mainly due to the skills such as shooting (42.8%), defensive heading (24.6%), chest receiving and passing (18.5%), attacking heading (5.5%) as explained by the regression equation .

Keywords— Influence of Skills, Soccer Playing Ability, Playing Positions, chest receiving and passing, Shooting, Defensive Heading, Attacking Heading, and Shooting.

I. INTRODUCTION

Soccer skill defined as “The learned ability to bring about pre – determined results with maximum certainty and the minimum outlay of time and energy”. If a skill can be learned it can be fought. By implication it can be improved, refined and developed possibly to a high degree. Also its efficiency can be impaired by use under. Have implications for coaches/teachers to know low players learn and low best to teach and develop skill.

The tactics of team play have undergone many modifications during the evolution of the sport. In the

olden days there were players who were specialized in a particular task. Forwards were assigned the sole task of scoring goals and defenders were expected to prevent the opposition from scoring. Positional responsibilities were narrowly defined and there was little overlap of roles. But today it requires more number of players. In the modern era, a soccer player should be an individual who can defend as well as attack.

You will hear coaches talking about the ‘first touch’ and aside from the ability to actually strike a ball correctly and pass with pace and precision, this is so important. But control is not just about trapping or killing the ball with the feet. Other parts of the body are often called into play, such as the chest, head or even the thigh. The ball is not always going to be delivered to the feet.

Hence the purpose of the present investigation was to analyse the relationship between the selected skills with the playing ability and the influence of skills on the playing ability among the junior soccer players of forward playing position.

II. METHODOLOGY

A. Selection of Subjects

In this study 20 soccer players (forwards) were selected by random sampling technique from Pondicherry Union Territory, India. The subjects are regularly practicing and participated in National and state level tournaments. Their age ranged between 19 and 21 years.

B. Selection of Variables

The dependent variable was the soccer playing ability. Considering the skills mostly used in the game of soccer, the following skills such as short pass, long pass, foot receiving and passing, thigh receiving and passing, chest receiving and passing, dribbling, defensive heading, attacking heading and shooting were selected as independent variables.

C. Statistical Tools

The mean and standard deviation for the playing ability and skills were calculated.

To examine the relationship between soccer playing ability and skills, pearson’s correlation (2 tailed) was computed.

With a view to find out the influence of skills on the playing ability, stepwise multiple regression analysis was computed

IBM SPSS 21.0 was used to analyse the data statistically.

D. Test Administration

To assess the playing ability of the subjects, the rating technique on percentage was followed by using three experts. The skill performance was quantified for the subjects by adopting appropriate tests and the tests demonstrated by “B. Ekblom (ed), *Handbook of Sports Medicine and Science-Football (Soccer)*, (Oxford: Blackwell Scientific Publications, 1994)”. .

The test reliability was established by the investigator by test retest method for five subjects and presented in the table 1.

Table1: Test reliability

S.No.	Variables	Correlation
1.	Short Pass	0.816*
2.	Long Pass	0.867*
3.	Foot receiving and passing	0.834*
4.	Thigh receiving and passing	0.812*
5.	Chest receiving and passing	0.806*
6.	Dribbling	0.810*
7.	Attacking Heading	0.848*
8.	Defensive Heading	0.876*
9.	Shooting	0.817*

*significant at 0.01 level of confidence. The required table value at 0.01 level of Significance is 0.77.

III. RESULT AND DISCUSSION

A. Result

The mean and standard deviation of the playing ability and skill performance variables of youth soccer players (forwards) is given in table 2.

The relationship which exists among the playing ability and skill performance variables of youth soccer players (forwards) is given in table 3.

Table 2

Mean and Standard Deviation for playing ability and skills

S.No	Variables	Mean	Std. Dev.
1	Playing Ability	74.19	5.96
	Skills		
1	Short Pass	4.50	1.26
2	Long Pass	4.00	1.51
3	Foot Receiving and Passing	4.13	0.89
4	Thigh Receiving and Passing	4.75	0.86
5	Chest Receiving and Passing	4.12	0.89
6	Dribbling	12.39	0.26
7	Attacking Heading	7.49	3.26
8	Defensive Heading	3.94	1.39
9	Shooting	6.69	2.82

Table 3

Correlation between Skills and Playing Ability

S.No.	Variables	Corr.	Sig.
1	Short Pass	0.208*	NS
2	Long Pass	0.439*	NS
3	Foot Receiving and Passing	0.615*	0.05
4	Thigh Receiving and Passing	0.519*	0.05
5	Chest Receiving and Passing	0.248*	NS
6	Dribbling	0.238*	NS
7	Attacking Heading	0.241*	NS
8	Defensive Heading	0.493*	NS
9	Shooting	0.654*	0.01

*The table value required for 14 d.f for significance at 0.05 and 0.01 levels are 0.497 and 0.623 respectively.

Table 3 shows that among the selected skills, foot receiving and passing (r= 0.615, p<0.05), thigh receiving and passing (r= 0.519, p<0.05), and shooting (r= 0.654, p<0.01) had significant relationship with the playing ability of youth soccer players of forward playing position.

The analysis of multiple correlation for the predictors of playing ability of youth soccer players (forwards) is presented in the table 4.

Table 4

Multiple Correlation Co-efficient For the Predictors of Soccer Playing Ability

Predictors	R	R Square	Adjusted R	S.E
1	0.654	0.428	0.387	4.66
2	0.821	0.674	0.624	3.65
3	0.927	0.859	0.823	2.50
4	0.956	0.914	0.883	2.04

1-Shooting, 2-Shooting, Defensive Heading, 3- Shooting, Defensive Heading, Chest Receiving and Passing, 4- Shooting, Defensive Heading, Chest Receiving and Passing, Attacking Heading.

From the table 4 it was found that the multiple correlation coefficients for the predictors such as speed, heading, leg length and chest receiving and passing is 0.956 produced highest multiple correlation with playing ability of junior soccer players. R Square value 0.914 showed the percentage of the influence of the predictors on playing ability of youth soccer players (forwards) explained by the regression models in the following order and presented in the figure 1.

1. Shooting influences 42.8% of the playing ability of youth soccer players (forwards).
2. Shooting (42.8%) and defensive heading (24.6%) influences 67.4% of playing ability of youth soccer players (forwards).
3. Shooting (42.8%), defensive heading (24.6%) and chest receiving and passing (18.5%) influences 85.9% of playing ability of youth soccer players (forwards).
4. Shooting (42.8%), defensive heading (24.6%), chest receiving and passing (18.5%) and attacking heading (5.5%) influences 91.4% of playing ability of youth soccer players (forwards).

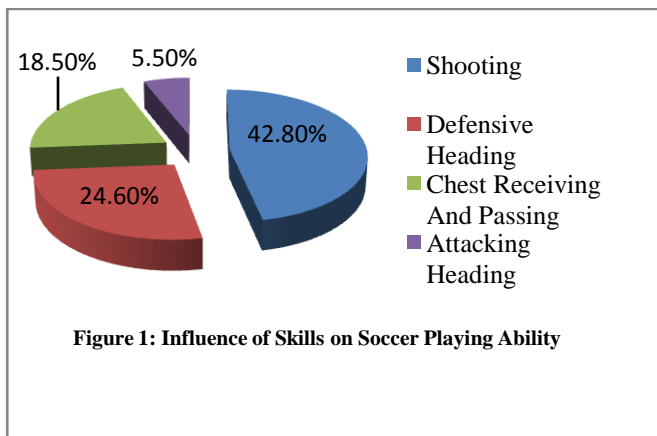


Figure 1: Influence of Skills on Soccer Playing Ability

The results of one-way analysis of variance for the influence of skill performance variables on playing ability of youth soccer players (forwards) are presented in the table 5.

Table 5

Analysis of Variance for the influence of Skill performance variables

	Sum of Squares	d.f	Mean Square	F	Sig.
Regression	486.82	4	121.71	29.35	0.01
Residual	45.62	11	4.15		

Table value require for 15 d.f for significance at 0.05 and 0.01 levels are 3.36 and 5.668 respectively.

The obtained $F = 29.349$; $p < 0.01$, shows that the skills are collectively influencing the playing ability of forwards. As

the F ratio is significant, stepwise multiple regression is computed to find out the skills which influence the soccer playing ability of the youth soccer players (forwards) and presented in the table 6.

Table 6

Stepwise Multiple Regression Coefficients for the Predictor Variables with playing Ability

Variables	B	SE B	Beta	t	Level of Sig.
A	1.66	0.20	0.78	8.49	NS
B	2.04	0.41	0.48	4.96	NS
C	2.84	0.61	0.42	4.66	0.001
D	0.48	0.18	0.26	2.67	0.02
Constant	39.60	3.69			

A-Shooting, B-Shooting, Defensive Heading, C- Shooting, Defensive Heading, Chest Receiving and Passing, D- Shooting, Defensive Heading, Chest Receiving and Passing, Attacking Heading.

1. Multiple Regression Equation:

Playing ability of youth soccer players (forwards) = $39.60(1.66) X_1 + (2.04) X_2 + (2.84) X_3 + (0.48) X_4$.

X_1 =shooting, X_2 =defensive heading, X_3 =chest receiving and passing and X_4 = attacking heading).

B. Discussion

Among the selected skills, foot receiving and passing (0.615; $p < 0.05$), thigh receiving and passing (0.519; $p < 0.05$) and shooting (0.654; $p < 0.01$) had positive significant relationship with the playing ability of the youth soccer players of forward playing position.

The obtained $F = 29.349$; $p < 0.01$, shows that the skills are collectively influencing the playing ability. As the F ratio is significant, multiple regression is computed to find out the skills which influence the playing ability of the youth soccer players of forward playing position.

The regression equation for the prediction of soccer playing ability for the male youth soccer players (forwards) of Pondicherry union territory include attacking heading, shooting, short kick and foot receiving and passing. As the multiple correlation of soccer playing ability with these independent variables is highly significant ($R = 0.956$) it is apparent that the obtained regression equation has a high predictive validity statistically.

Wittich and other reported that a three-compartment body composition analysis of 42 professional football (soccer) players and 33 age and body mass index – matched control subjects was determined by dual X-ray absorptiometry (DXA). The midfielders had a significantly higher percentage of fat (13.53.3%) than backs or forwards (11.12.8 and 11.02.3%, $P < 0.05$ and $P < 0.006$ respectively).

Reilly, Bangsbo and Franks reported this review is focused on anthropometric and physiological characteristics of soccer players with a view to establishing their roles within talent detection, identification and development programmes. The positional role of a player is related to his or her physiological capacity. Thus, midfield players and fullbacks have the highest maximal oxygen intakes ($> 60 \text{ ml} \times \text{kg}^{-1} \times \text{min}^{-1}$) and perform best in intermittent exercise tests. On the other hand, midfield players tend to have the lowest muscle strength.

The present study showed that among the selected skills, shooting (42.8%), defensive heading (24.6%), chest receiving and passing (18.5%), attacking heading (5.5%) is very much influencing the playing ability of the youth soccer players of forward playing position.

The study showed that the 91.4% of playing ability of the youth soccer players (forwards) of puducherry union territory is mainly due to the above four skills.

IV. CONCLUSIONS AND RECOMMENDATIONS

A. Conclusions

From the analysis of the data, the following conclusions were drawn.

- There was significant relationship between the playing ability of the Youth Soccer players (forwards) and the skill performance variables such as foot receiving and passing ($r= 0.615$, $p<0.05$), thigh receiving and passing ($r= 0.519$, $p<0.05$), and shooting ($r= 0.654$, $p<0.01$).
- The playing ability of the youth soccer players (forwards) of Puducherry Union Territory might be predicted from the selected skill performance variables.
- The regression equation for the prediction of the playing ability of the youth soccer players (forwards) of Puducherry Union Territory includes shooting, defensive heading, chest receiving and passing and attacking heading.
- As the multiple correlation on playing ability with the skill performance variables is significant, it is apparent that the obtained regression equation has a high predictive validity.

B. Recommendations

With the help of results derived from the present study, the following recommendations can be made.

- The results of the present study can be very much useful for Physical Educationists and coaches for screening and selecting potential Youth Soccer players (forwards) of Puducherry Union Territory at national and state levels.
- Further, the results of the study can help to frame the ideal methods of training by laying emphasis on the development of factors which are significantly related to Soccer performance with respect to the forwards.

- It may be recommended that the present study may be repeated for goalkeepers, defenders, midfielders etc.
- It may be recommended that the present study may be repeated for soccer players of various age groups, level of competitions and female soccer players also.
- It may be recommended that similar study may be repeated for other games.

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