ORIGINAL ARTICLE

Do Tactical Skills Differ Based on the Position and Level of Sportsmanship? A Study on Soccer Players

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ABSTRACT

The aim of this study is to determine whether there is a difference in tactical skills of soccer players according to the variables of sportsmanship level and position. For this purpose, 324 male soccer players with different sportsmanship levels participated in the study voluntarily. In the study, "Personal Information Form" and "Tactical Skills in Sports Inventory" created by the researchers were used as data collection tools. In the statistical analysis, first the Cronbach Alpha internal consistency coefficient of the inventory was examined, and the coefficient was found as .93. In determining the analyses to be performed after this stage, the skewness and kurtosis values of the inventory sub-dimensions were examined, and a normal distribution was found. Accordingly, a one-way ANOVA analysis was completed for the variables of position and sportsmanship level, and on the results found in the analysis a post-hoc Tukey analysis was completed to determine the differences. Additionally, a Pearson correlation analysis was performed to determine the relationship between the variables. When the results obtained within the scope of the study were examined, it was determined that there were significant differences between the groups according to the position and sportsmanship levels of the soccer players. When the results of the age variable were examined, positive significant relationships between the inventory sub-dimensions were found. Thus, it can be said that the variables considered within the scope of the research are effective on tactical skills.

Keywords: Soccer, Tactical Skills, Position, Level of Sportsmanship

INTRODUCTION

The importance of soccer, which is accepted as a popular sport today, is increasing day by day. Garganta (1997) state that most of the actions during the game are carried out without possession of the ball and that soccer is predominantly a tactical sport. McPherson (1994), on the other hand, states that considering the frequency, sequence, and complexity of the actions in the game, tactical skills are important in increasing sportive performance.

When relevant literature is examined, Mouchet (2005) discusses that tactical skills mean the decision-making activity during the game and knowledge about actions in motion; Grehaigne & Godbout (1995) state that tactical skills express the quality required for a player to perform the right action at the right time and therefore, need to be distinguished from strategies related to pre-discussed options, and Elferink-Gemser, Visscher, Lemmink & Mulder (2004) discuss that tactical skills are the ability of a player to perform the right movement at the right time and adapt quickly to the circulation of the ball.

As a matter of fact, many researchers emphasize the importance of tactical skills, which are cognitive skills addressed in the scope of the study, and an important component that needs to be developed (Nougier & Rossi, 1999; Elferink- Gemser & et al., 2004; Contreras, García-López, & Cervelló, 2005; Gutiérrez, González, García-López, & Mitchell, 2011; Chatzipanteli, Digelidis, Karatzoglidis, & Dean, 2016). Additionally, there are many studies focusing on psychological factors to achieve an optimal performance range in sports branches (Mahamud, Tuero & Márquez, 2007; Ruiz-Tendero & Salinero-Martin, 2012; Berengüí et al., 2013; Olmedilla, Ortega, Andreu & Ortin, 2015; Yarayan, Yıldız & Gülşen, 2018; Yarayan & Ayan, 2018; Yarayan, Yıldız, Gülşen & İlhan, 2020; Arı & et al., 2020; Çelik & Güngör, 2020; Aktaş-Üstün & Üstün, 2020,Ilkım & Akyol,2018).

Determining skills in team sports such as soccer is extremely difficult due to the versatile nature of the game and the interactions required between both teammates and opponent players. It is emphasized by researchers that choosing the right action at the right time and performing it efficiently throughout the game is important for good performance (Baker, Cote & Abernethy, 2003; Grehaigne, Godbout, & Bouthier, 2001). Additionally, athletes playing in different positions need to cope with a complex and rapidly changing environment, as well as adapt quickly to changing game conditions, ball movements and the opponent.

Considering all these actions, the aim of the study is to determine whether there is a difference in the tactical skills of soccer players according to the level of sportsmanship (amateur, professional, national), position (defense, midfield, striker) and age. For this purpose, answers to the following questions were sought:

1. Do tactical skills differ according to the position variable?
2. Do tactical skills differ according to athletes' level of sportsmanship?
3. Is there a relationship between tactical skills and the age variable?

MATERIAL AND METHOD

Research Model: This study uses a survey (descriptive) research model. "Survey research are used to determine the opinions, or interests, skills, abilities and attitudes of the participants about a subject or an event, and generally, the sample size is larger than other studies (Büyüköztürk et al., 2009). The research model is shown in Figure 1.

Research Group:

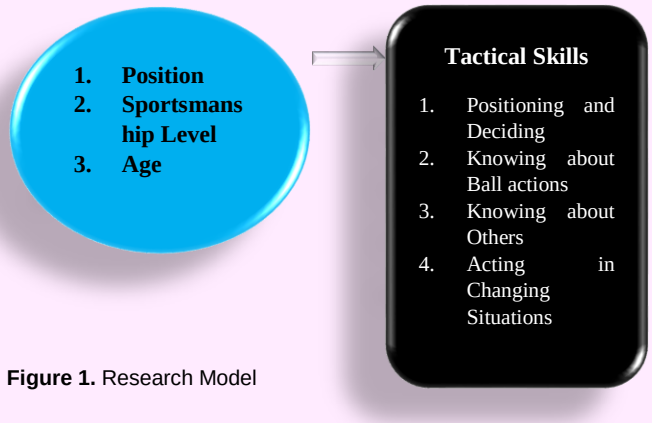

Figure 1. Research Model

Male soccer players of different sportsmanship levels (n = 324; age = 21.99 ± 3.78) participated in the study voluntarily. The mean duration of exercise of the participants was determined as (year = 9.46 ± 4.23). While the soccer players participating in the study were grouped, the soccer players among the professional soccer players who played in the national team at one stage of their career were considered as a separate group. Information about other variables included in the study is presented in Table 1.

Table 1. Information on Descriptive Statistics of the Research Group

Variables		n	%
Position	Defense	121	37.3
	Midfield	100	30.9
	Striker	103	31.8
Level of Sportsmanship	Amateur	115	35.5
	Professional	119	36.7
	National Athlete	90	27.8
	Total	324	100.0

Data Colection Tools:

Personal Information Form: The form created by the researchers consists of questions including demographic information about age, years active in sports, position, and sportsmanship level.

The Sport Tactical Skills Inventory (TACSIS): The inventory developed by Elferink-Gemser et al. (2004a) to evaluate tactical skills in combat sports (Invasion Games; soccer, basketball, handball, rugby, ice hockey, etc.) was adapted to Turkish by Yarayan, Esentürk, & İlhan (2019). The inventory consists of 4 sub-dimensions (Positioning and Decision Making, Knowledge on Ball Movements, Recognition of Opponents, Acting in Changing Situations) and 22 items. The 6-point Likert type survey is scored between (1) "Very Poor" and (6) "Excellent". The high scores indicate that the athlete has good tactical skills. The inventory distinguishes tactical movements with the ball from tactical movements without the ball. In the inventory, the 1st and 2nd sub-dimensions are related to the skills during offense when in possession of the ball, while the 3rd and 4th sub-dimensions are related to the tactical skills during defense in the game without the ball (Yarayan, Esentürk & İlhan 2019). While the reliability coefficient was determined as .93 in the adaptation study of the inventory, the Cronbach Alpha internal consistency coefficient was determined as .92 in this study.

Data Analysis and Interpretation: In analyzing the responses to the Tactical Skills Inventory, SPSS 22 program was used. The data of 8 people who responded to the question in the inventory form incompletely were excluded from the analysis. When the mahalanobis distance for extreme value analyses were considered, the data of 13 more people were excluded from the study. Analyses were completed on the responses collected from 324 people. When the skewness and kurtosis values of the inventory sub-dimensions were examined to decide on the analyses to be completed, the distribution was found to be normal (Table 1). A one-way ANOVA was completed to analyze the data according to the variables of position and sportsmanship level, and a post-hoc tukey was completed to determine the differences found as a result of this analysis. However, a Pearson correlation analysis was used to determine the relationship between age and the inventory. Statistical significance level was accepted as $p < 0.05$ in all evaluations.

Findings:

Table 2. Standard Deviation, Mean, Skewness and Kurtosis Values for Tactical Skills Inventory

Sub-Dimensions	N	□	Ss	Skewness	Kurtosis
Positioning and Deciding	324	41.277	6.815	-.152	-.465
Knowing About Ball Actions	324	19.243	3.316	-.581	.140
Knowing About Others	324	23.645	4.203	-.371	-.550
Acting in Changing Situations	324	19.108	3.342	-.344	-.615

Table 3. ANOVA Results on the Scores Obtained from Tactical Skills Inventory in Sports According by the Position Variable

Sub-Dimensions	Position	N	□	Ss	df	F	p	Difference-Tukey
Positioning and Deciding	1. Defense	121	40.71	6.42	2			
	2. Midfield	100	40.75	7.23	321			
	3. Striker	103	42.44	6.75	323	2.238	.108	
Knowing About Ball Actions	1. Defense	121	19.08	3.19	2			
	2. Midfield	100	18.88	3.42	321			
	3. Striker	103	19.78	3.30	323			
Knowing About Others	1. Defense	121	23.35	4.15	2	2.137	.120	
	2. Midfield	100	23.03	4.39	321			
	3. Striker	103	24.58	3.93	323			
Acting in Changing Situations	1. Defense	121	19.45	3.00	2	3.991	**.019***	3>2
	2. Midfield	100	18.38	3.54	321			
	3. Striker	103	19.40	3.43	323	3.489	**.032***	3>2, 1>2

Table 4. ANOVA Test Results on the Scores Obtained from the Tactical Skills Inventory in Sports According to the Variable of Sportsmanship Level

Sub-Dimensions	Position	N		Ss	df	F	p	Difference-Tukey
Positioning and Deciding	1. Amateur	115	39.92	7.61	2			
	2. Professional	119	41.54	6.02	321			
	3. National Athlete	90	42.65	6.45	323	4.293		
Knowing About Ball Actions	1. Amateur	115	18.55	3.72	2		**.014***	3>2, 1>2
	2. Professional	119	19.69	2.82	321			
	3. National Athlete	90	19.52	3.25	323			
Knowing About Others	1. Amateur	115	22.90	4.37	2	3.970	**.020***	3>2, 1>2
	2. Professional	119	23.95	4.01	321			
	3. National Athlete	90	24.17	4.13	323			
Acting in Changing Situations	1. Amateur	115	18.36	3.74	2	2.870	.058	
	2. Professional	119	19.68	3.04	321			
	3. National Athlete	90	19.28	3.02	323	4.883	**.008***	3>2, 1>2

As shown in Table 2, the skewness values vary between - .581 and - .152, and the kurtosis values - between .615 and 140. Considering the Tabachnick & Fidell's (2013) -1.5 +1.5 reference, the distribution was found to be normal.

When the tactical skills in sports are examined according to the position variable in Table 3, that there was no statistically significant difference in the sub-dimensions of positioning and decision making ($F(2-323) = 2.238$; $p > .05$) and having knowledge about ball movements ($F(2-323) = 2.137$; $p > .05$). There was a statistically significant difference in the sub-dimensions of knowing opponents ($F(2-323) = 3.991$; $p < .05$) and acting in changing situations ($F(2-323) = 3.489$; $p < .05$).

When the results of the post-hoc tukey analysis completed to identify the source of the difference are evaluated, it was determined that the mean scores of the strikers were higher than the midfield players in the knowing opponents' sub-dimension, and the mean scores of the strikers and defense players were higher than the players in the midfield position in the sub-dimension of acting in changing situations.

When the tactical skills in sports were examined according to the sportsmanship level variable shown in Table 4, there was no statistically significant difference in the sub-dimension of knowing opponents ($F(2-323) = 2.870$; $p > .05$). There was a statistically significant difference in the sub-dimensions of Positioning and decision making ($F(2-323) = 4,293$; $p < .05$), knowing about ball movements ($F(2-323) = 3,970$; $p < .05$), acting in changing situations ($F(2\text{-}323) = 4,883$; $p<.05$). Considering the results of the post-hoc tukey analysis conducted to determine the source of the difference, it was determined that the mean scores of players with national and professional sportsmanship levels were higher than amateur athletes in these sub-dimensions.

Table 5. Results of the Pearson Correlation Test on the Scores Obtained from the Tactical Skills Inventory in Sports by Age Variable

Variable n=(324)		Positioning and Deciding	Knowing About Ball Actions	Knowing About Others	Acting in Changing Situations
Age	r	.121*	.127*	.032	.051
	p	.030	.022	.562	.364

When the tactical skills in sports according to the age variable of the athletes were examined in Table 5, there was a low-level relationship ($r = .032$; $p > .05$) in the positive direction between knowing opponents, and a low-level relationship in the positive direction between acting in changing situations ($r =, 051$; $p >. 05$) which were not statistically significant. There was a low level positive ($r =.121$; $p <.05$) relationship between positioning and decision making, and a positive low level ($r =.127$; $p <.05$) relationship between knowing about ball actions which were statistically significant. These results show that as age increases, the skills related to positioning, decision making and knowing about ball movements will also increase.

DISCUSSION AND CONCLUSION

The aim of this study is to evaluate the tactical skills of soccer players according to the variables of sportsmanship level and position. According to the results obtained, it was determined that positioning and decision making according to the position variable did not show a significant difference in the sub-dimension of knowing about ball movements, but there was a significant difference in the sub-dimensions of recognizing opponents and acting in changing situations. It was determined that the mean scores of the strikers in the sub-dimension of knowing opponents were higher than the midfield players, and the mean scores of the strikers and defense players were higher than the midfield players in the sub-dimension of acting in changing situations.

When the relevant literature is examined, it was found that the results of a longitudinal study conducted by Kannekens, Elferink-Gemser, Post, & Visscher (2009) on the 14-18 age group are compatible with our study findings. In the study, it was reported that the tactical skills of defense players in all age groups were higher than the midfield position in the sub-dimension of acting in changing situations.

As a matter of fact, the organization of the team in the field must be good to win the game in soccer, to develop the skills of each player at the optimal level and to control the opponents. In this context, each position has different dynamics in soccer. Considering that players in defense and striker positions have a higher chance of making mistakes, it is always necessary to maintain concentration in the game. In fact, it can be said that the reason for players in these positions to have higher tactical skills is due to the fact that the relevant positions affect the game score more than the midfield position.

When the results were examined according to the athletic level variable, it was found that there was no significant difference in the sub-dimension of knowing opponents, but there was a significant difference in the sub-dimensions of positioning and decision-making, knowing about ball movements and acting in changing situations. In these sub-dimensions, it was determined that the mean scores of players with national and professional sportsmanship levels were higher than amateur athletes. When the tactical skills of elite and non-elite field hockey players were examined in a study conducted by Elferink-Gemser et al. (2010), it was reported that elite athletes had higher tactical skills. In another study by Keller, Raynor, Iredale & Bruce (2018), the differences in skill levels among athletes were revealed in a video-based soccer decision-making test. Along with these studies, it is seen that studies on tactical skills and performance relationship generally focus on the differences between professional and amateur athletes (Thomas, French, & Humphries, 1986; Allard, Deakin, Parker, & Rodgers, 1993; Williams, Davids, Burwitz, & Williams, 1993). Williams & Davids 1995; French et al, 1996;). The results of the relevant studies support our study findings.

Williams et al. (1993) state that soccer expertise depends on the correct and efficient application of movement patterns and sport-specific cognitive factors. In this context, it can be thought that these differences obtained at different performance levels are due to the intensity of the training (technical, tactical) practices.

When the results were examined according to the age variable, it was found that there was a low level of positive correlation with knowing opponents and a low level of positive correlation with acting in changing situations. It was determined that there was a low-level positive relationship with positioning and decision making, and a low-level positive relationship with knowing about ball movements. These results indicate that as age increases, the skills of positioning, decision making and knowing about about ball movements will also increase.

In a study conducted with soccer players between the ages of 14 and 18 by Kannekens et al, (2009), it was reported that the tactical skill levels of athletes increase with age. However, Ericsson & Kintsch (1995) state that the development of a successful sports career will increase with practice specific to experience, age, and skill.

CONCLUSION

In conclusion, it can be said that the variables considered within the scope of the study are effective on the tactical skill levels of athletes. As a matter of fact, when the results obtained on the sportsmanship level variable are considered, it is thought that it is important to develop tactical skills starting from the lowest levels to reach personal development and the optimal performance range.

Limitations: This research is limited to the football branch. It may be suggested that future research be conducted in different branches.

REFERENCES

1. Arı Aktaş-Üstün, A., & Üstün, Ü. D. (2020). Investigation of stress management in female volleyball players in terms of coping strategies. Spormetre-The Journal of Physical Education and Sport Sciences 18(3), 128-135.
2. Allard, F., Deakin, J., Parker, S., & Rodgers, W. (1993). Declarative knowledge in skilled motor performance: byproduct or constituent?. In Advances in Psychology 102, 95-107.
3. Arı, Ç., Ulun, C., Yarayan, Y. E., Dursun, M., Mutlu, T., & Üstün, Ü. D. (2020). Mindfulness, healthy life skills and life satisfaction in varsity athletes and university students. Progress in Nutrition, 22. 1-8.
4. Baker, J., Cote, J., & Abernethy, B. (2003). Learning from the experts: Practice activities of expert decision makers in sport. Research Quarterly for Exercise and Sport, 74, 342–347.
5. Berengüí, R., García-Pallarés, J., López-Gullón, J. M., Garcés de Los Fayos, E. J., Caravaca, E. C., & Martinez-Abellán, A. (2013). Fundamental psychological skills in Olympic Wrestling. Cuadernos de Psicología del Deporte, 12(2), 19-22.
6. Büyüköztürk, Ş., Çakmak, E. K., Akgün, Ö. E., Karadeniz, Ş. & Demirel, F. (2009). Scientific Research Methods. 3. Baskı Ankara: Pegem Akademi.
7. Çelik, O. B., & Güngör, N. B. (2020). The effects of the mental training skills on the prediction of the sports science faculty students' anxiety levels. International Journal of Eurasian Education and Culture, 9,888-929.
8. Chatzipanteli, A., Digelidis, N., Karatzoglidis, C., & Dean, R. (2016). A tactical-game approach and enhancement of metacognitive behaviour in elementary school students. Physical Education and Sport Pedagogy, 21,169–184.
9. Contreras, O. R., García-López, L. M., & Cervelló, E. (2005). Transfer of tactical knowledge from invasion games to floorball. Journal of Human Movement Studies, 49, 193–213.
10. Elferink-Gemser, M. T., Visscher, C., Richart, H., & Lemmink, K, (2004a). Development of the Tactical Skills Inventory for Sports. Perceptual and Motor Skills, 99(3), 883-895.
11. Elferink-Gemser, M. T., Visscher, C., Lemmink, K, & Mulder, T. (2004). Relation between multidimensional performance characteristics and level of performance in talented youth field hockey players. Journal of Sports Sciences, 22, 1053–1063.
12. Elferink-Gemser, M. T., Kannekens, R., Lyons, J., Tromp, Y., & Visscher, C. (2010). Knowing what to do and doing it: Differences in self-assessed tactical skills of regional, sub-elite, and elite youth field hockey players. Journal of Sports Sciences, 28(5), 521-528.
13. Ericsson, K. A., & Kintsch, W. (1995). Long-term working memory. Psychological Review, 102, 211-245.
14. French, K. E., Nevett, M. E., Spurgeon, J. H., Graham, K. C., Rink, J. E., & McPherson, S. L. (1996). Knowledge representation and problem solution in expert and novice youth baseball players. Research Quarterly for Exercise and Sport, 67, 386–395.
15. Garganta, J. (1997). Modela~ao tactica do jogo de futebol - estudo da organiza~ao da fase ofens iva em equipas de alto rendimento [Tactical modelling in soccer study about the attacking phase in top level teams]. (Unpublished Ph.D. Thesis), University of Porto, Porto, Portugal.
16. Grehaigne, J. F., & Godbout, P. (1995). Tactical knowledge in team sports from a constructivist and cognitivist perspective. Quest, 47, 490-505.
17. Grehaigne, J. F., Godbout, P., & Bouthier, D. (2001). The teaching and learning of decision making in team sports. Quest, 53, 59–76.
18. Gutiérrez, D., González, S., García-López, L. M., & Mitchell, S. (2011). Differences in decision-making development between expert and novice invasion game players. Perceptual and Motor Skills, 112, 871–888.

19. Ilkim, M., & Akyol, B. (2018). The comparison of some motoric characteristics of hearing impaired individuals sports athletic and gymnastic. Universal Journal of Educational Research 6(10): 2148-2152
20. Keller, B. S., Raynor, A. J., Iredale, F., & Bruce, L. (2018). Tactical skill in australian youth soccer: Does it discriminate age-match skill levels? International Journal of Sports Science & Coaching, 13(6), 1057-1063.
21. Kannekens, R., Elferink-Gemser, M. T., Post, W. J., & Visscher, C. (2009). Self-assessed tactical skills in elite youth soccer players: a longitudinal study. Perceptual and Motor Skills, 109(2), 459-472.
22. Mahamud, J., Tuero, C., & Márquez, S. (2007). Psychological characteristics related to performance: comparison between the requirements of the coaches and the perception of the athletes. Journal of Sports Psychology, 14(2), 0237-0251.
23. McPherson, S. L. (1994). The development of sport expertise: Mapping the tactical domain. Quest, 46(2),223-240.
24. Mouchet, A. (2005). Subjectivity in the articulation between strategy and tactics in team sports: an example in rugby. Italian Journal of Sport Sciences, 12, 24- 33.
25. Nougier, V., & Rossi, B. (1999). The development of expertise in the orienting of attention. International Journal of Sport Psychology, 30, 246–260.
26. Ruiz-Tendero, G., & Salinero-Martin, J. J. (2012). Psycho-social factors determining success in high performance triathlon: compared perception in the coach-athlete pair. Perceptual and Motor Skills, 115(3), 865-880.
27. Olmedilla, A., Ortega, E., Andreu, M. D., & Ortín, F. J. (2010). Psychological intervention program in soccer players: evaluation of psychological skills through CPRD. Journal of Sports Psychology, 19 (2), 249-262.
28. Tabachnick, B., & Fidell, L. (2007). Using Multivariate Statistics. Boston: Allyn ve Bacon.
29. Thomas, J. R., French, K. E., & Humphries, C. A. (1986). Knowledge development and sport skill performance: Directions of motor behaviour research. Journal of Sport Psychology, 8, 259–272.
30. Williams, A. M., Davids, K., Burwitz, L., & Williams, J. G. (1993). Cognitive knowledge and soccer performance. Perceptual and Motor Skills, 76, 579–593.
31. Williams, M., & Davids, K. (1995). Declarative knowledge in sport: A by-product of experience or a characteristic of expertise. Journal of Sport and Exercise Psychology, 17, 259–275.
32. Yarayan, Y. E., Yıldız, A. B., & Gülşen, D. B. A. (2018). Examination of mental toughness levels of individual and team sports players at elite level according to various variables. The Journal of International Social Research, 11(57), 992-999.
33. Yarayan, Y. E., & Ayan, S. (2018). Examination of imagination format of athletes in different team sport. Journal of International Social Research, 11(60). 1416-1422
34. Yarayan, Y. E., Esentürk, O.K., & İlhan, E. L. (2019). The sport tactical skills inventory (TACSIS) Turkish adaptation study. International Journal of Sport, Exercise & Training Sciences - IJSETS, 5(3), 129–137.
35. Yarayan, Y. E., Yıldız, A. B., Gülşen, D. B. A., & İlhan, L. (2020). Is the level of football a determinant of prosocial and antisocial behavior?. Spormetre-The Journal of Physical Education and Sport Sciences, 18(4), 125-133.