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Original article

Specialist's criteria on technical-tactical indicators of sports selection by soccer game functions

Criterios de especialistas sobre indicadores técnico-tácticos de selección deportiva por funciones del juego en fútbol

Critérios especialistas em indicadores técnico-tácticos de seleção esportiva por funções do jogo no futebol

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ABSTRACT

The modeling of sports training in soccer should consider principles such as specialization and sport specificity, since the different functions of the game show significant changes in the application of physical stimuli; therefore, certain indicators for training and sport selection should be taken into account. In this sense, the purpose of the research was to theoretically validate the importance of some technical-tactical indicators of sport selection by functions of the game in soccer. The descriptive-explanatory method of correlational order was used in the research. The criteria of 14 specialists were studied, based on the application of surveys and interviews. In these, the theoretical importance of eight indicators of technical-tactical performance was analyzed, with a view to



elaborating in the future a methodology for the search and selection of soccer talents by game functions. The indicator *Players by game profiles of international level* reached the highest score (4.86), followed by the indicator *establishing specific indicators by game profiles* (4.71), the indicator *determining the fundamental characteristics of game profiles* (4.36), the indicator *establishing game profiles* (3.79), the indicator *determining the demands of soccer* (3.64). The vision of the field (3.57), attitude (3.21) and communication (2.86) presented respectively the lowest scores achieved. The impact of the eight indicators analyzed was evident, with those related to technical tactical performance being more important than those related to psychological and/or tactical performance. The indicators have a medium to high relevance, considering the need to incorporate them in a specialized methodology for the selection of soccer talent by game functions.

Keywords: Technical-tactical indicators; Sports talent; Soccer; Game functions.

RESUMEN

La modelación del entrenamiento deportivo en el fútbol debe considerar principios tales como la especialización y especificidad deportiva, pues las distintas funciones del juego evidencian notables modificaciones en la aplicación de los estímulos físicos; por lo cual, hay que tener presente ciertos indicadores para el entrenamiento y la selección deportiva. En tal sentido, el propósito a investigar consistió en validar teóricamente la importancia de algunos indicadores técnico-tácticos de la selección deportiva por funciones del juego en fútbol. En la investigación se utilizó el método descriptivo-explicativo de orden correlacional. Se estudiaron criterios de 14 especialistas, a partir de una aplicación de encuestas y entrevistas. En estas se analizó la importancia teórica de ocho indicadores del rendimiento técnico-táctico, con vistas a elaborar a futuro una metodología para la búsqueda y selección de talentos del fútbol por funciones del juego. El indicador *Jugadores por perfiles de juego de nivel internacional* alcanzó el mayor puntaje (4.86), seguido del indicador *establecer indicadores específicos por perfiles del juego* (4.71), el indicador *determinación de las características fundamentales de los perfiles de juego* (4.36), el indicador *establecimiento de los perfiles del juego* (3.79), el indicador *determinación de las exigencias del fútbol* (3.64). La visión del campo (3.57), la actitud (3.21) y la comunicación (2.86) presentaron respectivamente los menores puntajes alcanzados. Se evidenció el impacto de los ocho indicadores analizados, siendo más importantes los relacionados con el rendimiento técnico-táctico que los del rendimiento psicológico y/o táctico. Los indicadores poseen una relevancia entre media a alta, considerando la necesidad de incorporarlos en una metodología especializada para la selección de talentos del fútbol por funciones del juego.

Palabras clave: Indicadores técnico-tácticos; Talento deportivo; Fútbol; Funciones del juego.

RESUMO

A modelagem do treinamento esportivo no futebol deve considerar princípios como especialização e especificidade esportiva, uma vez que as diferentes funções do jogo mostram modificações notáveis na aplicação de estímulos físicos; portanto, certos indicadores para treinamento e seleção esportiva devem ser levados em consideração. Neste sentido, o objetivo da pesquisa foi validar teoricamente a importância de alguns indicadores técnico-tácticos da seleção esportiva por funções do jogo no futebol. O método descriptivo-explicativo de ordem correlacional foi usado na pesquisa. Foram



estudados os critérios de 14 especialistas, com base na aplicação de pesquisas e entrevistas. Foi analisada a importância teórica de oito indicadores de desempenho técnico-táctico, com o objetivo de desenvolver uma metodologia para a busca e seleção futura de talentos de futebol por funções de jogo. O indicador Jogadores por perfis de jogo de nível internacional alcançou a maior pontuação (4,86), seguido pelo indicador que estabelece indicadores específicos por perfis de jogo (4,71), o indicador que determina as características fundamentais dos perfis de jogo (4,36), o indicador que estabelece perfis de jogo (3,79), o indicador que determina as demandas do futebol (3,64). A visão de campo (3,57), atitude (3,21) e comunicação (2,86) tiveram as notas mais baixas, respectivamente. O impacto dos oito indicadores analisados foi evidente, sendo os relacionados ao desempenho técnico-táctico mais importantes do que os relacionados ao desempenho psicológico e/ou táctico. Os indicadores têm uma relevância média a alta, considerando a necessidade de incorporá-los em uma metodologia especializada para a seleção de talentos de futebol por funções de jogo.

Palavras-chave: Indicadores técnico-tácticos; Talento esportivo; Futebol; Funções do jogo.

INTRODUCTION

In the process of sports preparation, special interest should be put on the initiation stage, since it is here where the bases for the development of the athlete are formed (Castejón Oliva, 2003). With the passage of time, soccer is becoming more relevant in the competitive field, which is why research is being done in order to comprehensively improve athletes, this becomes an essential step to correctly detect talents from the point of view of the search and scientifically based sports selection (Gallardo, García, & Feraud, 2019; Llames Lavandera, 1999). In this sense, the complexity of the actions in situations of confrontation with opposition, require the training of intelligent, analytical, creative, independent soccer players, with a high technical-tactical level of solution in game situations; therefore, coaches develop techniques to improve training models.

According to Bompá T., 1987, cited by Aguilera & Casimiro, 2000, the selection of sports talents is the action of identifying people with superior capacities to others; their selection reduces the time needed to achieve high performance, since only individuals capable of a particular sport are selected. In this sense, detecting the determinants of future performance in a given sport makes possible the design of search indicators and sport selection from an early age.

In the selection process of sports talent, physical education plays a very important role in the development of the bases for the future athlete (Cabezas, Llumiquinga, & Guayasamín, 2020; Morales & González, 2014). This leads to the idea that the physical education teacher is a very important entity in the search and sports selection process, as he/she is the first link in the formation of a possible talent. The appropriate age for the selection process of sports talent is when individuals are in the full stage of physical, sexual and psychological growth (Contreras & Sanchez, 1998), since there is a great relationship between the different rates of maturation. The simple fact of starting at an appropriate age and accumulating the playful practice during the right time in good conditions guarantees the sporting future of the players, as stated by Contreras & Sánchez (1998).



Sport talent is identified from a model of ideal athlete, (Gallegos Calero, 2018; CaleroMorales, 2019), where selection indicators directly related to a specific sport are taken into account (Morales. & Taboada, 2011; Flores Abad, Arancibia Cid, & Calero Morales, 2014; Tipán & Morales, 2018). Additionally, consulted authors state that the objective realities of the country of study should be taken into account, as well as the most influential factors related to heredity or genotype, and the socio-historical and cultural environment in which the potential athletes develop (Calero. S. M., 2012; Morales. & Taboada, 2011).

Once the functional assessment of the athlete is done, objectives are set in order to improve the physical and psychological condition, it is also important to determine their body morphology and analyze it in relation to the sport practiced (Sánchez Granja & Frómeta, 2018). An example is specific in Rodrigues (2013), mentioning that since years ago significant changes have been taking place in high performance clubs in Brazil, these, together with their technical teams, increasingly multidisciplinary, began to work on psychological, technical and tactical issues to achieve better results.

The child who mastered some technical skills, such as dribbling in soccer, could stand out from the others, without the need for other qualities. After this period of close observation of the technical skill, the stage where the physical preparation occupied almost all the spaces in soccer began to live (Rodrigues, 2013).

However, the numerous indicators of sport selection must have specific characteristics that incorporate the functions of the game, including indicators related to the technical-tactical component, indicators that are present even at early ages, (Friol, Morales, Díaz, & Guerra, 2012). It is understood that the technical-tactical performance in cooperative-opposition sports is an essential component in the modeling of sports training, (Morales. S., 2014), which, in the case of soccer, tactical knowledge and its relationship with game performance plays a predominant role. Initiation ages are also taken into consideration, (Gualoto Andrango, 2021) for which numerous intervention strategies are designed to improve the technicaltactical component (Expósito, González, & Salgado, 2020).

The functions of the game, decision-making and sports performance imply the design of specific training strategies, hence the remarkable variation between the training of a goalkeeper and a striker in soccer. Here, specific impacts of biological maturation and specific positions on the physical condition of young soccer players prevail, (Soarez, Fragoso, Massuça, & Barrigas, 2012). Components of importance such as anthropometric and somatotype are added in this study (Rodríguez-Rodríguez, López-Fuenzalida, Holway, & Jorquera Aguilera, 2019; García López, Villa Vicente, & Moreno Pascual, 1999; Vera et al., 2014).

On the other hand, the national literature, according to the consultation carried out, shows irregularities in the valuation of the functions of the game as a direct or indirect component in the process of search and sport selection; and in particular the role of technical-tactical performance indicators in soccer players as essential components in the process of sport selection.

Based on the considerations taken into account on the application of various indicators of sport in general, and of the selection process of sports talents specialized in soccer, the purpose of the research is to carry out a theoretical validation by consulting specialists on the importance of some technical-tactical indicators of sports selection by functions of the game in soccer.



These indicators have been created based on the methodology established by [Ray et al., \(2017\)](#). Next, the methods and procedures that were carried out for the success of this study will be shown.

MATERIALS AND METHODS

The research focuses on qualitative aspects, applying a survey to specialists in the soccer selection process at all levels. In this sense, the research is of a descriptive-explanatory type of correlational order. This method is reinforced by an interview to these subjects, in order to clarify some aspects about the scoring in the object of study.

In accordance with the methodology for establishing indicators proposed by the authors already mentioned in this work, the criteria of those authors are selected to study their theoretical importance in this research. These analysis indicators are described below:

1. Indicator 1: Determination of the fundamental characteristics of playing profiles. Achieved through analysis of FIFA manuals and literature that address the characteristics of the positions; analysis of the content of specialized FIFA courses; exchange with experienced soccer coaches; observation of matches at different levels and summary of actions by positions.
2. Indicator 2: Study of players by international level playing profiles. This is achieved by observing international matches, analyzing FIFA's technical reports on World Cups and exchanging with soccer specialists.
3. Indicator 3: Determination of the current demands of soccer. This is achieved through a study of the demands and challenges of soccer for players at an early age, study of selection indicators for the initiation and recruitment of players.
4. Indicator 4: Establishment of game profiles. This is achieved by analyzing the actions and functions by profiles according to the game systems and reorganizing the profiles according to their characteristics and functions.
5. Indicator 5: determination of indicators by game profiles. This is achieved with the analysis of indicators used in research developed on the subject, the reorganization of game actions and functions by profiles. In addition, the indicators are determined and readjusted based on the characteristics of the ages contemplated in the study (11-12 years old) and an analysis of the criteria emanating from the critical opinion and collective construction workshops is developed.
6. Indicator 6: Attitude. It is achieved by training until the last minute, cooperating with teammates in attack and defense and maintaining proper discipline.
7. Indicator 7: Communication. It is achieved by guiding teammates, being receptive to the signals and if he has not given everything in the game, he reproaches you.
8. Indicator 8: Field vision. It is achieved by selecting the best-positioned teammate, moving to free spaces and looking for useful positions.



The first five indicators are procedures and/or actions to be taken into account for sports selection in soccer directly related to technical-tactical performance, while the 6-8 indicators are related to the mental strengths of players to determine playing talent. The latter are directly related to psychological and therefore tactical performance. These indicators are subjected to consultation of specialists through direct survey; the theoretical importance provided by each of the technical-tactical indicators of sports selection is valued, bearing in mind the functions of the game in soccer.

In the selection of the specialists, three inclusion criteria were taken into account. First, they must have at least ten years of practical experience in the sport under study. Second, their curriculum must present outstanding national places in official championships in the Republic of Ecuador. Third criterion, possess at least a third level degree (degree in Physical Culture, Physical Activity and Sports or related) plus international certifications as a FIFA coach. All of the above would endorse the professional competencies of the selected specialists, who totaled 14 subjects who met the above criteria.

A five-level Likert-type scale was used for the evaluation by the specialists (Level 1: Very Low; Level 2: Low; Level 3: Medium; Level 4: High; Level 5: Very High), with level five being the highest score and therefore indicating the highest level of importance for each indicator analyzed.

To establish the existence of significant differences or not, the Kruskal Wallis test was used for K independent samples ($p \leq 0.05$), since there was no normal distribution of the data. The mentioned test was used with two groups of data, the first with the data established in the 8 indicators analyzed, and the second with the four indicators, that reached the highest mean score.

RESULTS AND DISCUSSION

By applying the instruments already announced, the results are compiled and analyzed from this table. Table 1 shows the results issued by the specialists for each indicator of analysis, where Indicator 2 evidenced the highest mean value (4.86 points), for a qualitative assessment between High and Very High according to the scale described in the *Methods* section (Table 1).



Table 1. - Indicators analyzed by specialists

No	Indicator 1	Indicator 2	Indicator 3	Indicator 4	Indicator 5	Indicator 6	Indicator 7	Indicator 8
1	4	5	3	3	4	3	2	3
2	4	5	4	4	5	3	3	3
3	5	5	3	3	5	3	2	3
4	3	5	3	4	5	3	3	3
5	4	5	3	4	5	4	2	4
6	5	5	4	4	5	2	3	5
7	4	5	4	3	5	3	3	4
8	3	4	4	4	4	4	3	3
9	5	5	3	4	4	3	3	3
10	5	5	4	4	5	4	2	4
11	5	5	3	5	5	3	3	4
12	4	4	4	4	5	3	4	3
13	5	5	5	3	5	4	5	4
14	5	5	4	4	4	3	2	4
	4,36	4,86	3,64	3,79	4,71	3,21	2,86	3,57

In this sense, specialists have considered that the study of players by game profiles at the international level is the supreme key to determine variables of technical-tactical performance by game functions (according to the score achieved). Therefore, authors such as [Morales \(2014\)](#) show the need to plan training models according to the positions of the player, being more optimal the adaptive responses of the organism, synonymous with an improvement in sports performance ([Calero. S. 2019](#)).

The indicator with the highest average score reached, after the previous one, was Indicator 5 (4.71 points), with a qualitative qualification between High and Very High, indicating that in the opinion of the specialists consulted, once the players have been studied by game profiles at the international level, specific indicators by game profiles should be established. These indicators will be useful to control the characteristics of the players to be selected; performance scales according to their possibilities from a prospective point of view classify them. In this way works are also appreciated in the international literature in athletes and non-athletes as specified in [Flores Abad, Arancibia Cid, & Calero Morales \(2014\)](#), in [Cabezas, Llumiquinga, & Guayasamín \(2020\)](#) and in [Tipán & Morales, \(2018\)](#).

Indicator 1 is the third with the highest average score reached in the evaluation (4.36 points: High), considered by the specialists who assume that the determination of the fundamental characteristics of the game profiles is very necessary to conform search and sport selection methodologies. Indicator 1, as evidenced in the different actions for its achievement, starts from the consultation of different primary research sources, such as FIFA manuals, which emphasize the study of actions by positions, since they characterize the game system, as evidenced by [Moreira, Sousa, Greco, Arroyo, & Praça, \(2021\)](#).



The fourth indicator with the highest average value was four (3.79 points: between Medium to High). Thus, the specialists consider that the establishment of game profiles is of importance for the organization of technical-tactical performance analysis indicators by game functions for future research and sports selection in soccer. On the other hand, the fifth indicator that has reached the best score was 3 (3.64 points: between Medium to High), which in consideration of the specialists the determination of the demands in soccer possesses importance, but at the same time it is related to the determination of indicators by game profiles (Indicator 5), being a complement to achieve it, as evidenced by [Calero-Morales \(2019\)](#).

However, despite the importance of the psychological component in the sports training process, and moreover in the search and selection of sports talent, ([Maldonado, 2017](#)) indicators 6 to 8 evidenced the lowest scores in the present study, indicative which in consideration of the specialists have less weight in the technical-tactical component by functions of the game to be used in a methodology of search and sports selection.

Of the three indicators mentioned above, indicator 8 was the one that obtained the highest average score (3.57 points: between Medium and High), followed by Indicator 6 (3.21 points: Medium) and Indicator 7 (2.86 points: between Low and Medium); therefore, Field Vision, Attitude and Communication, according to the specialists consulted, can be taken into account to establish technical-tactical indicators for soccer game functions, but above all tactical ones, since these indicators are more related to psychological analysis and social behavior.

On the other hand, table 2 shows a correlation performed to establish the existence or not of significant differences between each indicator analyzed (Table 2 and Table 3).

Table 2. - Kruskal Wallis test for all indicators analyzed

Ranges			
	Groups	N	Average range
Data	Indicator 1	14	73,04
	Indicator 2	14	90,93
	Indicator 3	14	47,39
	Indicator 4	14	52,61
	Indicator 5	14	85,86
	Indicator 6	14	32,96
	Indicator 7	14	24,43
	Indicator 8	14	44,79
	Total	112	



Table 3. - Test statistics^{a,b}

Data	
Kruskal-Wallis H	60,717
gl	7
Asymptotic sig.	,000

a. Kruskal Wallis test.
b. Grouping variable: groups.

The Kruskal Wallis test is presented in the table 2, where all the evaluations issued by the specialists in all the analysis indicators are compared. This evidences significant differences ($p=0.000$), an order of average ranges is presented according to the means obtained as part of table 1, which also evaluates the theoretical importance issued by the specialists by means of a survey).

However, a more detailed and solid analysis that starts from the results of the table 4, where 50 % of the data obtained is analyzed, specifically the four indicators that reached the highest scores. On the other hand, significant differences are evidenced in their comparison ($p=0.000$), when deducing that the scores achieved allow classifying each indicator with a statistically different value of importance, according to the specialists consulted (Table 4 and Table 5).

Table 4. - Kruskal Wallis test for indicators4 with the highest mean score

Ranges			
	Groups	N	Average range
Data	Indicator 2	14	37,93
	Indicator 5	14	34,36
	Indicator 1	14	27,14
	Indicator 4	14	14,57
	Total	56	



Table 5.- Test statistics^{a,b}

Data	
Kruskal-Wallis H	20,997
gl	3
Asymptotic sig.	,000

a. Kruskal Wallis test.
b. Grouping variable: groups.

As a recommendation of the present research, it should be assessed the criteria of a greater number of specialists, including international specialists, data that could modify the theoretical criteria issued, validating in a better way, at least from the theoretical point of view, what is the relative importance of each indicator related to the technical-tactical performance by functions of the game to improve the process of search and sport selection in soccer.

CONCLUSIONS

The importance of the eight indicators analyzed for the process of sport selection by game functions is evident. Thus, it is corroborated that those indicators directly related to the technical-tactical performance have a greater theoretical importance for this process, according to the surveyed specialists, than the indicators directly related to the psychological or tactical performance. All the indicators analyzed have, according to the specialists, a medium to high importance, considering the need to incorporate them in a specialized methodology for the selection of soccer talents by game functions.

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The authors declare not to have any interest conflicts.

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The authors have participated in the writing of the work and analysis of the documents.



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