

The Importance of Special Coordination Skills in Goal Shooting by U-12 Soccer Players

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Abstract

Soccer is a worldwide sport, and its practice at early ages is an essential aspect. One of its fundamentals is goal shooting, which is a technical activity that involves kicking the ball into the opponent's goal. This can be done with the lower limbs, trunk, and head. This action is directly related to coordinative abilities, which are an important element in formative soccer training, and a vital part of this research. It was established as an objective to substantiate the significance of special coordination skills training in goal shooting by U-12 soccer players. The methodology was based on a theoretical review, which uses methods such as the analytical-synthetic for the processing and analysis of information, as well as the inductive-deductive method to go from the more specific (as in the goal shooting) to the more general (as in the sportsman's coordination development in the goal shooting technique). The type of research is documentary, through which an analysis of the secondary data information is established. Among the primary findings, there were some researchers who determined that coordination exercises enhance children's technique at early ages. Therefore, they improve areas such as control, stability, and goal shooting.

Keywords: Special coordinative abilities, soccer, goalkeeping, kicking.

INTRODUCTION

Soccer is one of the most popular sports practiced in almost all the countries of the world, one of its main tournaments at the national level is the World Cup that is held every four years, during each year there are tournaments in each league local of the member countries of the governing body that is the International Federation of Associated Football (FIFA) (Novella et al., 2019) There are also important continental tournaments such as the Champions League in Europe, the Champions League of the Asian Soccer Confederation (AFC), the Confederation of North America, Central America and the Caribbean Soccer Champions League (CONCACAF) and the Copa Libertadores a South America level.

Throughout history, there is some evidence that indicates the beginning of the practice of this sport, in China in the second or third century, however, the beginnings are attributed to Great Britain in the middle of the nineteenth century, considering as the Oldest football competition in the world to the English Football Association Cup (FA), founded in 1872 (Pérez, 2021), currently football is practiced by people of all ages and genders.

Regarding formative football, Anaya (2021) points out that it is the “modality practiced mainly by children and young people where, apart from trying to achieve the recreational-sporting objective, the integral development of its participants is sought through training according to their age, inclusive forms of integration and participation in tournaments, where the least important is the numerical results obtained by the teams so as not to rule out any player”. At these early ages, it is crucial to consider the coordination or coordination abilities, which in football are manifested through elements of individual technique and their improvement is seen in the correct adaptation of the technical gesture to the demands of the game situation in which they are played. find the athlete (Sotelo Besada, 2018).

With the above said, Prieto Mondragón & Salas (2019) expresses that the increase of individual technical skills in current football does not take place if the player has not previously optimized his coordination capacity since the basic technique consists, above all, in having a balanced relationship between the body and the ball, for Therefore, it is essential to work on the essential coordination skills, as well as the technique of shooting at goal.

According to what is expressed by Youcoach (2021), the special coordination capacities that are worked on in soccer training are the following:

- Balance ability
- Orientation capacity
- Motor reaction capacity
- Ability to anticipate motor
- Ability to perceive space-time
- Ability to differentiate
- Ability to pace
- Ability to join movements

Given that these capacities are developed from the training processes, it is necessary to take into account that in each stage of growth the human being presents differences in order to have an optimal development, because at certain ages an increase in physical capacities is more feasible , coordinative, psychological and emotional, therefore, it must be understood that in ages ranging from 9 to 13 years, the skills implicit in general coordination can be developed with greater potential (Carrasco et al., 2008).

As for the shot on goal, it is the technical action that involves throwing the ball into the goal of the opposing team, which can be executed with the lower extremities, trunk and head. This action is directly related to coordinative capacities; which are an important element in formative soccer

training, in turn equivalent to the neuromuscular ability to work together some components within the teaching - learning process (Idoate, 2020).

Currently, the improvement of the shot on goal is an issue that worries coaches, it is a phenomenon of study and analysis of specialists and coaches of the different categories, since in football offensive work is essential to achieve the greatest amount of goals in the rival arc, which is the priority to win a match (Medina Rojas, 2019), The same author mentions that each player has to assimilate different forms of shooting from different positions, making the decision to generate a shot that can be low, high, mid-height, with parabola, direct, or with stoppage of the ball with the use of one or the other part of the foot, which depends on the technical skills of the shooter.

In the study carried out by Lago Peñas & López Graña (2001) On the coordinative capacities in collective sports games, he points out that the training and formation of specific gestures in the athlete must be carried out with effective training methods that allow the construction of motor skills.

As explained above, it is necessary to review the analyzes on the training methodology that includes, in addition to teaching and capacity building, work on the consolidation of motor schemes, it is shown that the better the coordinative aspect expressed by a subject, the better will be the execution of the technical gesture, therefore, the training must be an optimization at a technical, tactical and physical level of the individual that has to be reflected in each situation proposed to the players (Benavides Roca et al., 2018), considering the game as a fundamental basis in the work to improve these aspects, due to the age of the players, generating in them the resolution of the multiple situations that may arise in the game, choosing the best option from their repertoire of possibilities in the necessary time (Leyva Garzón, 2011).

It is necessary to emphasize that, in the training categories, one of the main problems encountered is the lack of precision in shooting at goal, which is why there is a deficit of assertiveness in real game situations in the Under-12 category. Due to the difficulty of being able to carry out a study in the field due to the current restrictions in Ecuador due to Covid-19, it is a priority in this investigation to establish as an objective, to base the importance of training special coordinative capacities in shooting at goal in soccer players U-12.

METHODOLOGY

This research is a theoretical review study, which uses theoretical methods such as analytical - synthetic, for the processing and analysis of information, as well as the inductive-deductive method, to go from the specific such as shooting at the door, In general, such as the coordinative development of the athlete in the execution of the technique of shooting at the door, the type of research is documentary, through which an analysis of the information obtained as secondary data is established.

The tool for the selection of studies or research carried out on the subject of special coordination skills in shooting at goal in the Under-12 category, is the critical reading of articles from the Spanish critical reading skills program (CASPe) (Cabello, 2016), Through the review template, by which specific questions or criteria are established that allow the researcher to make a critical reading of the articles being analyzed and obtain an adequate review of them; 10 questions are established, grouped into 3 general aspects, which are: a) Are the results valid? b) What are the results? and c) Are they applicable in your environment? This instrument has the approval of Spanish experts.

In the research process, the search for information or similar studies was established, through the title or abstract, that contain keywords in Spanish such as: special coordination skills, football, shooting at goal and in English goalkeeping, shooting, special coordination skills in soccer, excluding research related to the tactical foundation; for which it relies on scientific journals such as: Scielo, Fdeportes, Dialnet, Thesis, among others, in which topics are investigated in English or Spanish, thus selecting the articles that are related to the aforementioned keywords, after Therefore, critical reading is carried out, articles that are not relevant are excluded, through the use of the CASPe tool.

For this research, a total of 60 articles were considered with topics of formative football, special coordination capacities and shooting at goal, making an analysis through critical reading, obtaining as a result table 1 where the total of articles are detailed. found, and selected.

Table 1.

Total articles reviewed and selected

Ditail	Quantity
Found items	60
Articles selected by topic and abstract	55
Selected articles after critical reading	20

Source: Edgar Mosquera

Of the 20 articles selected for the analysis, a demographic analysis table is established, obtaining the number of articles on special coordination abilities per year, per language, including per study variable, as shown in Table 2.

Table 2.

Demographic analysis of article variables

Variable	N	Percentage
Years	2015	3 15%
	2016	3 15%
	2017	2 10%
	2018	4 20%

	2019	4	20%
	2020	3	15%
	2021	1	5%
	Total	20	100%
Language	Espanish	18	90%
	English	2	10%
	Total	20	100%
Variables	CCE	14	70%
	Shot to Goal	6	30%
	Total	20	100%
Country	Ecuador	6	30%
	Espain	8	40%
	Colombia	3	15%
	Argentina	3	15%
	Total	20	100%

Source: Edgar Mosquera

As can be seen in table 2, the highest number of publications regarding special coordination capacities was made in 2018 and 2019 with 20% each year, 90% of the publications are in Spanish; the main variable in which there are a greater number of articles is that focused on special coordinative capacities with 70%, And when reviewing the articles by country, 40% of articles published are from Spain, a country where a large number of sports topics can be found, due to the large number of university offerings in Bachelor's and Master's degrees in Sports, for What there are several studies on sports issues, as well as 30% of existing information in Ecuador, which begins to work on the coordination capacities in children and adolescents, with a focus on athletes and physical education classes.

DEVELOPING

Special coordination abilities and technique in sport are two important topics analyzed both in the teaching methodology in physical education and in sports teaching, therefore, it is essential to establish the definitions that the authors give to these study variables.

Table 3 shows the definition of coordination skills such as shooting at goal, described by several authors who agree with regard to the definitions of these topics.

Table 3.

Definition of coordinative capacities according to authors

Authors	Definition
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(Solana & Muñoz, 2011)	The definitions of coordinative capacities express the idea that efficiency in movement is the result of the optimal relationship between the Central Nervous System and the musculature.
(Calvachi Yáñez, 2015)	
(Taday Gonzáles, 2016)	
(Cuenca Díaz, 2014)	
(Peña Rodríguez, 2018)	
(Díaz, 2018)	
(Carrillo Mena, 2017)	
(Bolaños Montenegro, 2019)	

Source: Edgar Mosquera

With regard to coordinative capacities, the main definition expresses the idea that efficiency in movement is the result of the optimal relationship between the Central Nervous System and the musculature, this definition is described by eight authors, establishing the importance of the movement caused by the Central Nervous System and the muscles that the athlete has.

Table 4.

Definition of shot on goal according to authors

Authors	Definition
(Idoate, 2020)	Technical action that involves throwing the ball into the goal of the opposing team in order to score a goal.
(Deportes, 2012)	
(Charchabal Pérez et al., 2017)	

Source: Edgar Mosquera

In table 4, it can be seen that 3 authors coincide with the definition of shot on goal, which is the technical action that involves throwing the ball into the goal of the opposing team in order to score a goal. As it is a technical action that takes place as the culminating part of a dangerous play or action in the opponent's goal, the authors emphasize that the shot at goal must end in a goal and measure the effectiveness by counting the number of times that shots were made on goal and of those how many shots ended in a goal.

In the theoretical review carried out in this research, it is sought to understand the importance of the special coordinative capacities in the shooting at goal, in the Under-12 category, which is why Sotelo Besada (2018) points out that the incorporation of the work of the coordinating capacities between the contents included in the training process acquires great importance in the evolutionary process of acquiring the technique, being more specific when the motor expression support of the soccer technique is proposed in the tasks; that is, coordination influences the improvement of technique in general, therefore, also in shooting at goal

The same author Sotelo Besada (2018) specifies that the coordinative capacities are based on the functions of the nervous system and the muscular-articular system. The processes of conduction and regulation of motor activity are developed in all individuals according to the same rules, but not with the same speed, accuracy, differentiation and mobility; Therefore, it is understood that the coordination capacities are developed in a different way in each individual, which leads to understand that in the U-12 category the type of training of the technique of shooting at goal should be considered, based on the capacities coordination that each child can develop according to the improvement needs they present, whether in speed, in differentiation in mobility, etc.

Likewise, the author Bautista Vega (2019) in his research mentions that coordination exercises aim to enhance different capacities in those who practice ball sports. Among which are the orientation, to generate synchronization between the trajectory of the ball with the movement of the body; Thus, it can be determined that through correct coordination, it facilitates body movements, turns, ball controls, the way to kick at goal or to generate a shot at goal with different parts of the body (Toala Pilay & Aguilar Morocho, 2018).

On the other hand, the authors Charchabal Pérez et al. (2017) in their study point out that precociously maturing children could hit the ball and shoot harder, but they did not necessarily turn out to be the most skillful or best when they grew up. What determines that early learning of shooting at goal does not generate certainty that in the future they will be better, that is, not only should work on technique, but on the child's motor skills through the work of coordinative abilities. Specials (Zambrano Murillo & Aguilar Morocho, 2021).

According to Morejón Proaño (2014), the specific coordinative capacities are more developed within the framework of the corresponding competition discipline and are characterized, according to, by the ability to vary the technique of the modality; That is to say, that the special coordinative capacities serve in the improvement of each technical aspect that the different sports require such as football, through which many movements and technical exercises are carried out that can be improved from the work of the special coordinative capacities in each athlete, especially at an early age.

In other words, the special coordinative capacities such as orientation, balance, differentiation, coupling, are fundamental in the development of learning the technique in soccer, considering therefore, the analysis of these capacities to understand the influence that generates in the improvement of the technique of shooting at goal, at all times in the practice of soccer exercises combined with orientation and shooting at goal are worked, in the same way the work through coordination and balance in exercises that conclude with the technique of shooting at goal with the different parts of the body such as the head and the foot.

In the work that is carried out from an early age, several authors agree that the teaching and improvement of coordination skills should be deepened so that the athlete can be fully trained and technical work is facilitated.

With regard to technique in sport, Caiza & Pijal (2012) points out that it is the way in which the athlete executes some game action effectively and with (energy) economy, interacting in an ideal way with the environment, the game tool (ball), with your teammates and rivals, reaching a partial or total goal, without violating the regulations. Therefore, since it is an action that involves movement, orientation and coordination, it requires the application of exercises of coordination skills that allow the player to adapt the position of the body correctly to the trajectory and speed of the ball, Cuasapas Bermeo & Aguilar Morocho (2021).

Lucas Guadamud & Aguilar Morocho (2021) Regarding the preparation of the athlete at an early age, the authors' focus on recreational work stands out, doing it through the game, generating that the players at that age learn while having fun but with the responsibility of correctly performing the technique in football Thus, they work with materials such as ula-ula instead of coordination ladders, application of games such as knocking down cones at certain distances after performing exercises such as driving, control, among others, (Aguilar Morocho & Aguilera Suárez, 2013).

Likewise, it was possible to determine through the different studies analyzed, that the recurrent exercises in the practice of soccer through the improvement of coordinative capacities, are the races with lateral and frontal driving with completion of the goal shot, working in this way movement control capabilities and driving technique and preparation for shooting at goal; driving the ball in a zigzag or through cones or stakes, improve coordination, orientation to movement, differentiation of rhythm, location and spatiality, thus generating a work of skills focused on technique and repetitively as expressed in his study (Solana & Muñoz, 2011).

Finally, the author Wein (2018) in his book Soccer tailored to the child, expresses that coordinative abilities influence the technique and development of the game but above all, it makes him an intelligent player, since it allows the athlete to make decisions faster, he dominates the game, he becomes quick in decision-making and improves the definition of goal, and above all, the athlete from an early age, continues to develop and grow.

In short, the work of special coordination capacities at an early age can determine that in the athlete's development process several aspects can be improved, from the motor part, the technique and especially the psychological, achieving better decision-making as who plays soccer, therefore, positively influences the search to finish a play in goal.

CONCLUSIONS

The research was carried out through a systematic review of articles and theses by means of which it is verified that the special coordinative capacities are important in the improvement of

the athlete's technique, therefore, their work in the technique of shooting is essential. goal and even more so when it comes to formative ages such as the U-12 category.

Through the bibliographic review it was concluded that there is 30% of information and studies related to coordinative capacities and soccer in Ecuador, that is, more and more research focused on coordinative capacities is being carried out in both group sports such as soccer. as well as in work in initial or formative stages, since from this learning at an early age a technically gifted athlete with a great capacity for definition can be generated in the future.

In the same way, the bibliographic review allowed to demonstrate that the special coordinative capacities influence very effectively with the development of technical works applied to soccer, therefore, it is applicable to work with athletes in the Under-12 category; generating the possibility of having a range of improvement in the future with the implementation of this type of practice focused on special coordination skills, as well as in the execution of the technique of shooting at goal, promoting the application of specific exercises when the conditions in the Ecuador improve and they can return to face-to-face sports practices.

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