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Original article

The development of the balance coordination capacity in Greek wrestling athletes, initial categories

El desarrollo de la capacidad coordinativa, equilibrio en atletas de lucha greco, categorías iniciales

O desenvolvimento da capacidade de coordenação de equilíbrio em atletas de luta grega, categorias iniciais

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ABSTRACT

Considering the importance of coordination capacity in sport, the objective of this study was framed in assessing the development of coordination matchacity, balance in Greek wrestling athletes, pioneer category (11-12 years old), from "Roberto Amarán" Project, in Pinar del Río, Cuba. For this purpose, it was worked with a population conformed by the 12 athletes who practice this modality in this project, as well as six trainers in charge of carrying out the training process in the initial categories. As part of the scientific methods at empirical level, there were applied interviews, tests of static balance, dynamic balance and control, in variable conditions. The data obtained were processed through the statistical package IBM SPSS Statistics Visor 20. The results reveal shortcomings in the athletes studied, in the development of this coordination capacity, which is manifested in an incorrect posture in relation to the location of the center of gravity, in the performance of different technical actions of the sport discipline, derived in turn from shortcomings in the work of coaches, who do not have sufficient tools for a systematic and adequate work with this coordination capacity in their athletes.

Keyword: athlete; coordination capacity; initial categories; balance; Greek wrestling.

<http://podium.upr.edu.cu/index.php/podium/article/view/983>



RESUMEN

Considerando la importancia de las capacidades coordinativas en el deporte, el objetivo del presente estudio se enmarcó en valorar el desarrollo de la capacidad coordinativa, equilibrio en los atletas de lucha greco, categoría pioneril (11-12 años), del Proyecto "Roberto Amarán", en Pinar del Río, Cuba. Para ello, se trabajó con una población conformada por los 12 atletas que practican esta modalidad en dicho proyecto, así como seis entrenadores encargados de llevar a cabo el proceso de entrenamiento en las categorías iniciales. Como parte de los métodos científicos a nivel empírico, se aplicaron entrevistas, pruebas de equilibrio estático, de equilibrio dinámico y de control, en condiciones variables. Los datos obtenidos fueron procesados a través del paquete estadístico IBM SPSS Statistics Visor 20. Los resultados arrojados develan insuficiencias en los atletas estudiados, en el desarrollo de esta capacidad coordinativa, que se manifiestan en una postura incorrecta en relación con la ubicación del centro de gravedad, en la realización de las diferentes acciones técnicas de la disciplina deportiva, derivadas a su vez de insuficiencias en la labor de los entrenadores, los cuales no cuentan con las herramientas suficientes para un trabajo sistemático y adecuado con esta capacidad coordinativa en sus atletas.

Palabras clave: Atletas; capacidades coordinativas; Categorías iniciales; Equilibrio; Lucha greco.

RESUMO

Considerando a importância das capacidades coordenativas no esporte, o objetivo deste estudo foi enquadrado em avaliar o desenvolvimento da capacidade coordenativa, equilíbrio em atletas de luta grega, categoria pioneira (11-12 anos), do Projeto "Roberto Amarán", em Pinar del Río, Cuba. Para isso, trabalhamos com uma população composta por 12 atletas que praticam esta modalidade no referido projeto, além de seis técnicos encarregados de realizar o processo de treinamento nas categorias iniciais. Como parte dos métodos científicos a nível empírico, foram aplicadas entrevistas, equilíbrio estático, equilíbrio dinâmico e testes de controle em condições variáveis. Os dados obtidos foram processados por meio do pacote estatístico IBM SPSS Statistics Viewer 20. Os resultados obtidos revelam inadequações nos atletas estudados, no desenvolvimento desta capacidade coordenativa, que se manifestam em uma postura incorreta em relação à localização do centro de gravidade, na execução das diferentes ações técnicas da disciplina desportiva, derivadas por sua vez de insuficiências no trabalho dos treinadores, que não dispõem de ferramentas suficientes para um trabalho sistemático e adequado com esta capacidade coordenadora nos seus atletas.

Palavras-chave: Atletas; Capacidades de coordenação; Categorias iniciais; Saldo; Luta grega.



INTRODUCTION

Sports wrestling is considered one of the oldest sports, as its origin is related to the appearance of man on earth, evolving in the different socioeconomic formations that have occurred in this world.

Besides being considered a combat sport and eminently tactical, sports wrestling is described as a sport: "individual, acyclical, of varied intensity, characterized by the reciprocal overcoming of both wrestlers who aspire to obtain victory through the use of different technical movements that are allowed by the rules of competition" (González, 2013).

From the energetic point of view, it presents high physical demands, which are manifested as a sport of speed-force-resistance and high coordination demands. This last aspect is obvious in the majority of the cases in which it is a question of giving a classification to these sports specialties.

In this sport, the wrestler faces an opponent, in a reduced and common space for both, in a hand-to-hand wrestling, where the aim is to bend his opponent through technical and tactical actions, depending on the modality in question, or to immobilize him for fractions of seconds with the upper part of his back stuck to the mattress to score the victory.

There are three modalities recognized by the International Federation (UWW) and they are: wrestling, Greek-Roman and women's wrestling. In particular, the Greek-Roman wrestling takes place in the standing position or four points. No grabbing below the waist is allowed. Its objective is to knock down the opponent and get his shoulder blades to touch the mattress simultaneously to obtain the victory by one of the established forms.

On the other hand, there is the fact that, in the sports wrestling, as a combat sport, body to body, one of the elements of the preparation that most influences the integral development of the wrestler is the coordination capacities, which are linked to the learning of the technical actions and interact with each aspect of the physical preparation, so that to achieve success in the attack and defense actions it is necessary to have an optimal development of these capacities.

In the field of sports, several authors have referred to coordination capacities and their importance. Rosales and Rodríguez (2012), refer that these constitute a neuro-muscular complex, which ensures the control and regulation of the sportsman's motor activity. In close combination with other qualities, they stand as indispensable conditions for sports performance. In combat sports, they acquire a capital importance, given the conditions of direct corporal opposition in which they are developed.

According to Weineck (2005), the following are considered as components of the coordination capacities: motor adaptation capacity and adaptation to variations, differentiation and regulation capacity, reaction capacity, orientation capacity, balance capacity, rhythm capacity and combination and coupling capacity of movements.



These capacities constitute one of the priorities in the teaching program of Wrestling in the initial categories (7-8, 9-10 and 11-12 years old) in Cuba, since their appropriate development is vitally important for the practice of this discipline, since it provides the child with the possibility of executing the movements with more cleanness in its technical structure and a better ideal motor representation of the actions.

Among the important coordination capacities in the wrestler, there is the capacity of balance, indispensable to maintain a correct position in the attacks, defenses and against keys that guarantee their effectiveness. This is developed at an especially early stage and should therefore be trained from the beginning with special emphasis.

In the field of physical activity and sport, balance is the "capacity of man to maintain his own body, another body (or objects) in a controlled and stable position, by means of compensatory movements" (García and Rodríguez, 2015).

Different authors have referred to balance as a coordinating capacity and its particularities, both for Physical Education and the practice of Sport. Castañer and Camerino, (2001), analyze it as a basic element of the perceptive-motor functioning and define it as the capacity to control one's own body in space and to be able to recover the posture after an unbalancing factor.

This capacity has two important aspects as it is the dynamic balance and the static balance. As a unit of measure for the balance capacity, one can take the duration of the maintenance of the state of balance or the speed and quality of the balance replacement.

According to Luna and Luarte, (2010), static balance is defined as the process or perceptive-motor capacity that seeks to maintain control of a posture without displacement and that, in addition, seeks an adjustment of the anti-gravitational posture (referred to the vestibular apparatus) and an external sensory and proprioceptive information. Dynamic balance could be defined as the capacity to maintain the correct position in each situation that requires the activity being performed, generally with displacement.

Muñoz and Palomino, (2017), citing other authors, refer to dynamic balance as the state in which a person moves and, during this movement, constantly modifies and shifts his center of gravity and base of support. This "state" is called posture, which corresponds to the relationship between the position of the body and extremities, seen as a whole in space, and is stabilized by the postural reflexes. These reflexes are interconnected, thus maintaining an adequate position, depending on the activity, making adaptations according to the sensory information that is perceived.

This capacity of balance is commanded by the vestibular system, which is in charge of coordinating the information received about the position, speed and direction of head movements and works together with some systems such as the visual and somatosensory systems that are in charge of informing about the position and movement of the environment and objects in relation to the body. All this information is integrated, establishing schemes that allow maintaining spatial orientation and balance (Muñoz y Palomino, 2017).

Peñalosa, Manrique and Herrera (2017), citing other authors, refer that:



"it is necessary to measure each one of the coordination capacities and to evaluate with the corresponding development by age, sex, degree of fatigue, nervous tension of the moment, level of training of the basic physical qualities of the individual, according to the parts or corporal regions that intervene in the movement, skill of their members, speed of execution and change in the rhythms of execution, changes of direction and sense, height of the center of gravity with respect to the base of sustentation and amplitude of the base of sustentation of the body, duration of the exercise, among other elements (p.98).

Numerous are the studies carried out, related to the evaluation of the balance through the use of different tests with diverse purposes (postural correction, motor development, physical aptitude. At the same time, on the development and evaluation of balance as a coordinating capacity in the sports field, there are various studies published, which are fundamentally framed in the practice of different sports modalities, in sports performance and in the prediction of sports injuries, among them: *Linek et al.*, (2017); *Osipov et al.*, (2018); *Triana and Espitia* (2019) and *Arévalo* (2020).

In particular, the treatment of this topic in the sports wrestling is scarce, being able to cite the work done by *Rosales* (2011); *Rosales and Rodriguez* (2012) and *Moran et al.*, (2015).

The balance training has a great influence on the improvement of the rectification capacity in case of error, as well as on the improvement of the kinaesthetic, visual and vestibular perception. The sense of balance is not innate, but acquired and, therefore, very related to learning and susceptible to be improved with training (*Vinuesa y Vinuesa*, 2016).

The first condition for the wrestler to be able to execute the movements in search of victory is the need to conserve support. It is obvious that, in the process of struggle, both wrestlers have that support, but this can be different. The degree of permanence of this support depends on the position of the body, adopted by the wrestler, and also on the actions of the muscles that maintain these positions (*González et al.*, 2014).

Any type of wrestling begins from the standing position, when the athlete leans on his feet and maintains an upright position, therefore, the wrestler, in his movements, must keep in mind the laws of conservation of balance (*Gonzales et al.*, 2017).

In the course of the combat, in order to carry out attacking actions, the athlete tries to unbalance his opponent in order to knock him down on the mat, and the other athlete, on the contrary, tries to maintain st capacity and do the same to his opponent, but when the attacker makes his opponent lose his balance, he also loses it, since it is impossible to execute such movements without losing it (*Morán-Navarro et al.*, 2015). In this way, in the process of struggle, each wrestler continuously recovers his balance.

However, the elements previously discussed, which reveal the importance of the balance coordinating capacity for the sport wrestling, particularly in the initial categories, in the work with these categories in the province of Pinar del Rio, different insufficiencies have been observed in the athletes, derived from an incorrect posture in relation to the location of the center of gravity in the realization of the different



actions of the wrestling, not being appreciated an adequate systematic work by the trainers during the training units in the development and control of this coordinating capacity. This has a negative impact on the correct assimilation and execution of the technical elements of this sport discipline.

In this sense, the objective of this research was framed in assessing the development of the balance coordination capacity, in the Greek wrestling athletes, pioneer category (11-12 years old), of the "Roberto Amarán" Project, in Pinar del Río.

MATERIAL AND METHODS

Type of research and context

The study is of an observational, cross-sectional descriptive type. The research was framed in the Greek wrestling athletes, pioneer category (11-12 years old), of the "Roberto Amarán" Project, in Pinar del Río province.

Population

It was worked with the population formed by the 12 athletes that practice the Greek-Roman wrestling sport of the "Roberto Amarán" Project in Pinar del Río.

Auxiliary sample: six coaches in charge of carrying out the training process of this sport in the municipality of Pinar del Río.

Research methods and techniques

Methods were used, both of the theoretical order (historical-logical, analysis-synthesis, documentary analysis), and empirical:

Measurement: in the application of the tests (two of static balance and two of dynamic balance) and the control test in variable situations to determine the level of development of the balance coordinating capacity of the athletes studied.

For the selection of the applied tests, the published studies, their validation, as well as the particularities of the sport discipline and age of the athletes were taken into account:

Evaluation of static balance:

1. Test of flamenco balance (Eurofit)

Initially, the performer is placed in an upright position, with one foot on the floor and the other resting on a 3 cm wide board. On the signal of the controller, the performer will pass the weight of the body to the leg raised on the board, bending the free leg until it can be grasped by the hand on the same side of the body (Figura 1).





Fig. 1 - Postural graphic of the flamenco balance

The test is based on counting the number of rehearsals the performer has needed to achieve balance for one minute.

If the performer falls more than 15 times in the first 30 seconds, the test is over. Several previous attempts will be made before timing the subject or the final test (Table 1).

Tabla 1. - Evaluation

Attempts	Score	Evaluation
1	10	Excellent
2	8	Good
3	6	Regular
4 - 14	4	Deficient
15	0	Bad

2. T-shape or balance test.

This test consists of making the scale, advancing the trunk and placing it parallel to the ground, while raising one leg behind, always looking ahead (Figure 2). It is to maintain the position for ten seconds, with the following score:

Evaluation criteria

- If it is maintained, four points.
- If it hesitates slightly, three points.
- If you lose your balance more than once, two points.
- If you are not able to maintain it at any time, one point.



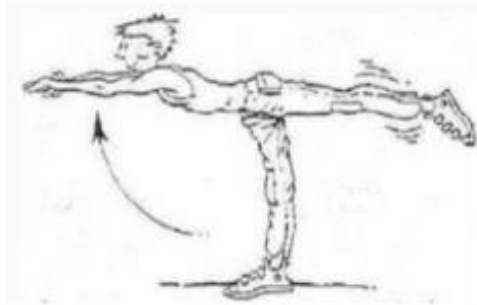


Fig. 2 - Postural graph of the balance in T form

Evaluation of dynamic balance:

1. Flight balance test (Figure 3) and (Table 2).

Terrain: open or closed flat surface

Instruments: evaluation sheet. Two sections of the Swedish drawer or a bench measuring approximately 50 centimeters high. Tape or chalk to mark a circle on the floor.

Description: the subject must stand on the Swedish drawer, at the edge of it, jump and in the air turn around to fall into the circle, in a balanced condition, facing the drawer. The score given is ten points for whoever falls in balance conditions, with his feet placed in the line parallel to the drawer. If you fall at 45 degrees or more from the parallel, but in balance conditions, seven points. If you fall in an unbalanced condition, outside the circle, four points. And if he rests his hands on the floor, two points.



Fig. 3 - Postural graph of balance in flight



Table 2.- Evaluation table

Test of balance in flight	
2	Vey low
4	Low
7	Medium
10	High

- High status: dominates the test perfectly.
- Medium state: presents balance control in this test.
- Low state: presents a certain degree of difficulty in maintaining balance. Needs observation.
- Very low state: presents difficulty in maintaining balance after a jump. Needs attention.

1. Balance Test in bar (Figure 4) and (Table 4).

The test consists of walking, as fast as possible and without falling, from one side of the bar to the other. The conditions of performance, barefoot, with hands on the waist and if possible, facing the wall. The number of attempts (passing the bench) you make in 30 seconds is measured.

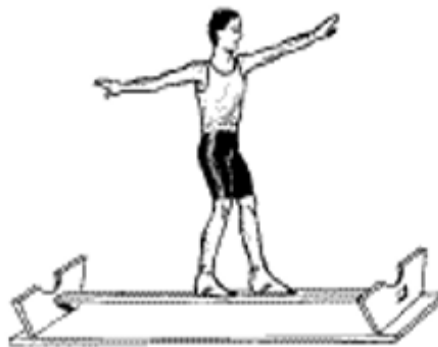


Fig. 4 - Postural balance graph on the bar

Table 3. - Table of evaluation

Attempts	Score	Evaluation
1	0	Excellent
2	4	Good
3	6	Regular
4 - 14	8	Deficient
15	10	Bad



Test of balance control in variable conditions: it was applied to the studied athletes (12), during the development of the technical actions in a study match of the training unit corresponding to the teaching plan of the 2018-2019 course. Its objective was to evaluate the level of development of the balance coordination capacity in these athletes.

For this purpose, a structured sheet with seven elements to be evaluated was used (1. Conservation of the initial position at the beginning of the combat, 2. Use of resources to counteract the attempts of the opponent to unbalance, 7. Recovery of the balance after a technical action of the opponent), where the observer (coach, specialist of vast experience in the Greek-Roman wrestling) was giving a score between 1 and 3 to each of the two athletes, according to their behavior in the actions during the encounter. For the general evaluation of the event, the points obtained by each athlete in each of the indicators are averaged, granting Good: when obtained between 21-18 points; Regular: between 17-11 points and Bad: less than 11 points.

The matches were developed with a duration of three minutes.

Interview: it was applied to the sample of trainers (6) with the purpose of knowing important elements for the investigation, related to their knowledge, preparation and action, around the work of development of the coordinative capacity balance in the training units.

Mathematical statistical methods

The data obtained was processed through the IBM SPSS Statistics Visor 20.

RESULTS AND DISCUSSION

Results of the test of coordination and balance

Evaluation of the Static balance

Flamenco balance test (Eurofit)

As can be seen in table 4, it is worth noting that seven athletes are evaluated as Deficient (58.3 %) and only one (8.3 %) is evaluated as Excellent (Table 4).

Table 4. - Results of the application of the Flemish balance test (sample=12)

Athletes	Amount of attempts	Score	Evaluation
1	5	4	Deficient
2	4	4	Deficient
3	5	4	Deficient
4	3	6	Regular
5	6	4	Deficient
6	5	4	Deficient
7	5	4	Deficient
8	3	6	Regular
9	2	8	Good
10	2	8	Good
11	5	4	Deficient
12	1	10	Excellent



T-shape or balance test

In this test the results obtained are better than those of the previous one, even without considering them good, since as can be seen in table 5, the greatest number of athletes (58.3 %) obtain three points and only three (25 %) obtain the maximum, four points (Table 5).

Table 5. - Results of the application of the Scale test (sample=12)

Atletes	Score
1	3
2	3
3	3
4	3
5	2
6	3
7	2
8	3
9	4
10	4
11	3
12	4

Evaluation of dynamic balance

In-flight balance test

In table 6, the results obtained in this test are reflected, where all the athletes are evaluated between very Low (58, 3 %) and low (41, 7 %) (Table 6).

Table 6. - Results of In-flight balance test (sample = 12)

Atletes	Score	Evaluation
1	2	Very low
2	2	Very low
3	4	Low
4	2	Very low
5	4	Low
6	2	Very low
7	4	Low
8	4	Low
9	4	Low
10	2	Very low
11	2	Very low
12	2	Very low



1. Balance test on the bar

Here 100 % of the athletes get an evaluation for Deficiency (Table 7).

Table 7. - Results of the application of balance test on the bar

Atletes	Amount of attempts in 30 seg.	Score	Evaluation
1	5	8	Deficient
2	7	8	Deficient
3	8	8	Deficient
4	7	8	Deficient
5	4	8	Deficient
6	8	8	Deficient
7	6	8	Deficient
8	7	8	Deficient
9	8	8	Deficient
10	7	8	Deficient
11	5	8	Deficient
12	8	8	Deficient

In summary, the results obtained in the four tests applied, it can be deduced that the athletes studied present difficulties, both with static and dynamic balance; only two subjects (9 and 12) show a satisfactory result overall. This alerts us to insufficiencies in the work with this coordinating capacity in the development of the training units.

Results of the balance control test to athletes (study match)

Table 8 shows the results of the control test carried out on the athletes who made up the population studied to evaluate the level of balance they presented in real situations of development of the technical actions.

As it can be appreciated in the seven controlled aspects, the average of the evaluations is of Regular and, in general, only two athletes (16.6 %) are evaluated of Good, while the rest (83.3 %) is evaluated of Regular (41.6 %) and Bad (41.6 %) (Table 8).



Table 8. - General results of the balance control test under variable conditions (Sample=12)

Atletas	Aspect Evaluations							General Evaluation
	1	2	3	4	5	6	7	
1	2	2	2	1	1	1	1	10/ Bad
2	1	1	1	1	1	1	1	7/ Bad
3	1	1	3	1	1	1	1	9/Bad
4	1	1	1	1	1	1	1	7/ Bad
5	2	3	1	2	2	2	2	14/ Regular
6	2	1	1	1	1	3	2	11/ Regular
7	3	3	3	2	2	3	3	19/ Good
8	3	2	2	3	3	2	3	18/ Good
9	3	1	2	2	3	3	2	16/ Regular
10	1	2	3	1	1	2	1	11/ Regular
11	2	3	1	2	1	3	2	14/ Regular
12	1	1	1	1	2	1	2	9/ Bad
Average	1,8	1,7	1,7	1,8	1,5	1,9	1,7	11,2/Regular
	R	R	R	R	R	R	R	

This confirms the existing problems with balance in the sample studied, which are generally evident in different situations, both offensive and defensive that may occur during a combat, which may be derived from shortcomings in the work with this capacity to coordinate the development of preparation in the different training units.

Results of the application of the interview to the coaches

The 100 % of the interviewees consider important the development of the coordination. In conclusion, the results of the different instruments applied, as part of the study conducted, reveal difficulties in the manifestation of balance by the athletes in the category studied, which affect the correct learning and application of the different technical elements of the discipline in question, during the development of the sessions of the teaching plan.

These are largely a consequence of the inadequacies presented by the coaches of these categories in the systematic work for the development of this coordinative capacity, linked to the knowledge and use of the necessary means and methods, as well as the methodological orientations and other tools that facilitate this work.

The tests and instruments used in the study, can constitute tools to be used by the wrestling coaches of these initial categories, when developing the work of preparation and control of their athletes in the development of the teaching plans, in the training units capacity in the wrestlers, in early ages (items 1), as well as the development of the balance coordination capacity in the wrestlers (items 3). However, 78 % of them refer to dedicate time to the training unit and only 18 % (items 6) have the necessary tools to work, control and evaluate the development of this capacity in their athletes (Table 9).



Table 9. - Coaches Survey Results (Ítems 1, 3, 4 y 6)

Items	Yes		No		To some extent	
	Figure	%	Figure	%	Figure	%
1	23	100 %	-	-	-	-
3	23	100 %	-	-	-	-
4	18	78 %	2	9 %	3	13 %
6	4	18 %	13	56 %	6	26 %

On the other hand, 100 % places the balance between the most important coordinating capacity to work and develop in the wrestler, together with others no less important such as reaction (100 %), orientation (78 %) and anticipation (74 %) (Table 10).

Table 10. - Most important coordination capacity in the wrestling (ítems 2)

No.	Coordinative capacities	Figure	%
1	Orientation	18	78 %
2	Reaction	23	100 %
3	Balance	23	100 %
4	Rithm	16	70 %
5	Anticipation	17	74 %
6	Diferenciación	4	17 %
7	Coupling	13	57 %

In relation to work, with this capacity, in the training units, 83 % do it together with other capacities and 17 % independently. 78 % do it indistinctly in the initial, main and final part of the training unit, when in the Pipd (Integral Program of Preparation of the Sportsman) it is oriented to do it in the main or developing part. Likewise, 100 % declare to attend it in the four stages of the preparation (Table 11).

Table 11. - Working with the coordination capacity balance in the training units (Ítems 5)

Items	Answer option	Figure	%
a) How	Independent	4	17 %
	Together with other ones	19	83 %
a) Training Unit part	Initial part	18	78 %
	Initial part	18	78 %
	Final part	18	78 %
a) Stage	Initiation stage	23	100 %
	Basic formation stage	23	100 %
	Drilling stage	23	100 %
	Deeping stage	23	100 %



Regarding the tools for the work in the development of the balance coordination capacity, only 22 % agree to have test to evaluate and measure this capacity and 39 % some exercises and games to use them in this function, but none confirm to have specific methodological orientations that guide and support them in this work (Table 12).

Table 12. - Tools available (items 7)

No.	Answer options	Figure	%
1	Specific methodological orientation	0	
2	Test to evaluate and measure this capacity	5	22 %
3	Variety of exercises and games for his/her development	9	39 %
4	Others		

Finally, in question eight, when asking for other general considerations related to the development of balance in the wrestlers, 35 % of the sample suggests that, given its importance, it should be addressed more frequently in methodological preparations and workshops.

Likewise, 26 % point out the usefulness of knowing different exercises and tests that facilitate the work with this capacity and others. In general, the results of the applied interview reveal that, although the importance of developing the coordination and balance capacity is recognized, in wrestling athletes, particularly in the initial categories, sports teachers do not have the necessary arsenal for this task.

According to [Arevalo \(2020\)](#), a superior balance in sport-specific conditions is an important factor in a top athlete, because proper dynamic alignment of the center of gravity in relation to the support base is critical to successful sport performance.

For [López \(2014\)](#), coordination work takes on an important role because it is the basis for technical-tactical work, in addition to the fact that coordination and, above all, work in dynamic balance has a very significant importance in injury prevention and according to this author "it can be said that it is key during the entire training process and even in the previous stage.

For this reason, according to [Gebel et al., \(2018\)](#), the design of a balance training program, which includes exercises that reproduce the specific demands of an athletic activity, could improve both balance and sports performance.

In conclusion, the results of the different instruments applied, as part of the study conducted, reveal difficulties in the manifestation of balance by the athletes in the category studied, which affect the correct learning and application of the different technical elements of the discipline in question, during the development of the sessions of the teaching plan.

These are largely a consequence of the inadequacies presented by the coaches of these categories in the systematic work for the development of this coordinating capacity, linked to the knowledge and use of the necessary means and methods, as well as the methodological orientations and other tools that facilitate this work.



The tests and instruments used in the study, can constitute tools to be used by the wrestling coaches of these initial categories, when developing the work of preparation and control of their athletes in the development of the teaching plans, in the training units.

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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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