

Methodology for planning physical preparation in the sports initiation stage 6-8 years in Soccer
Metodología para la planificación de la preparación física en la etapa de iniciación deportiva 6-8 años en el Fútbol

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ABSTRACT

Football for sports initiation demands careful planning of physical preparation. In this regard, the following scientific problem was addressed: how to contribute to the improvement of physical preparation planning in the sports initiation stage of 6-8 years in Football? To provide a solution, a methodology was designed. Analytical-synthetic, hypothetical-deductive, document analysis, scientific modeling, systemic-structural functional, specialist criteria, survey and the Delphi statistical method were used. The results of the specialist criteria revealed high agreement in the theoretical relevance and prognosis of feasibility of practical application of the methodology.

Keywords

Methodological procedures; Training plans; Force with weights.

RESUMEN

El Fútbol de iniciación deportiva demanda de una planificación cuidadosa de la preparación física. Al respecto, se abordó el siguiente problema científico: ¿cómo contribuir al perfeccionamiento de la planificación de la preparación física en la etapa de iniciación deportiva 6-8 años en el Fútbol? Para darle solución se diseñó una metodología. Se emplearon los métodos y/o técnicas de investigación analítico-sintético, hipotéticodeductivo, análisis de documentos, modelación científica, sistémico-estructural-funcional, criterios de especialistas, encuesta y el método estadístico Delphi. Los resultados del criterio de especialistas revelaron alta concordancia en la pertinencia teórica y pronóstico de factibilidad de aplicación práctica de la metodología.

Palabras clave

Procedimientos metodológicos; Planes de entrenamiento; Fuerza con pesas.

INTRODUCTION

Planning physical preparation in the context of sports initiation is one of the fields of knowledge that today require deepening through research that generates new theoretical and methodological proposals that allow from solid scientific bases its adequate development in correspondence with the objectives and tasks of this important stage of sports training.

What was stated above reveals the need for physical trainers and sports, as part of their professional pedagogical skills, must have solid competencies in the art of planning physical loads of different orientation or content in the temporal structures of sports preparation processes. This professional skill in the context of sports initiation must be developed with more scientific and methodological rigor, since there is a risk of attacking the morphofunctional development and health of children, adolescents and young people who begin in sport practice.

One of the sports that most affects the presence of sports injuries in children, adolescents and young people in the sports initiation stage is Football, not only because it is the most universal or practiced of sports, but also, because its competitive actions require a lot of contact between players, braking, jumping, starting, changes sudden steering movements, among other physical demands that impose a strain on the musculoskeletal system constant aggression.

Hence, the importance of properly planning physical preparation in this sport and more in the early sports initiation stage, which requires a very high dosage careful management of physical loads in correspondence with the psychomotor development achieved and with the use of the sensitive phases of motor development. That is why the generation of knowledge that enriches the methodology for preparing the physical preparation plans, especially in the context of sports initiation, must be attended with priority.

When analyzing the state of the art of the object of study of “the methodology of elaboration of the physical preparation plans” have been treated by various authors, among the most important that we can find the works of: Forteza and Ranzola (1988), García et al (1996), Forteza (2001, 2007), Orceno (2003), Romero (2006), Collazo et al (2006), Navarro et al (2010), Romero and Becali, (2014), Laróvere (2015), Collazo (2020, 2021) and Heredia (2023).

These authors have provided the general procedures for distribution and dosage of the physical loads in the different temporal structures of the planning (periods, stages, mesocycles, microcycles and training sessions) based on different perspectives or forms that are explained below:

1. Distribution and dosage of the physical load of force based on percentages of the volumen general macrocycle using training time as magnitude (Strength and Ranzola,1988; Forteza, 2001; Forteza and Ramírez, 2007).

The main limitation of this methodological procedure is that time is not the adequate magnitude to plan the volume, since it only reveals the duration of the training, for example, 2 hours for aerobic endurance training. By Therefore, the volume that is expressed in time is not real, nor does it allow real control or individualization.

2. Distribution and dosage of the physical load based on percentages of the theoretical volume of the macrocycle using as magnitude the repetitions and distances traveled of each manifestation of strength, resistance, speed, joint mobility, and coordinative capacities (García et al, 1996; Romero, 2006; Collazo et al, 2006;).

This methodological procedure manages to give adequate magnitude to the content of the different manifestations of physical abilities. However, it does not guarantee that, when developed the breakdown of the percentages of the given overall volume into the appropriate magnitudes (repetitions, distances, jumps, throws, etc.), get to the microcycle or training session training the ideal number of these for achieving the objectives and for the application of a specific method, since in general there may be excess or lack of repetitions, kilometers, meters, jumps, among other volume magnitudes.

In addition, from what has been stated, it is also observed that not all stages or mesocycles have the same number of weeks or microcycles, which can create mathematical conflicts when distribute and dose the physical load. It is also not clear how to output the individualization in planning.

3. Distribution and dosage of the physical force load based on load plans based on of the volume and intensity in the different microcycles or weeks of work by stages of preparation (Orocene, 2003; Navarro et al, 2010; Romero and Becalli, 2014; Bompa, 2016, 2019; Collazo, 2020, 2021; Heredia, 2023).

The methodology for preparing planning documents that take as starting point for charging plans, constitutes an appropriate innovation, as it allows determine a permissible range of volume, intensity, rest, frequency and duration of the physical load. It starts from properly assigning what can truly be done by an athlete or group in a training session or work microcycle, with minimum and maximum permissible ranges, which does allow treatment at individualization of physical loads.

However, methodological challenges remain in its use, for example: it must be given treatment to the characteristics of the manifestations of strength, resistance, speed, joint mobility and coordination abilities in terms of how it should The characteristics of each component of the physical load must be

taken into account. It is also necessary to consider the training method, especially in the distribution and dosage of the series in the training session, since in the different series it can manifest volume, intensity and rest differently.

As it can be interpreted, each methodological procedure for the preparation of the sports physical training planning documents, evolved to that the distribution and dosage of the loads is as efficient, real, controllable and individualized. However, in the context of sports initiation there remain challenges and challenges in the scientific-methodological order that allow planning or preparation of plans for adequate development of physical preparation.

On the other hand, the analysis of the main sources specialized in physical preparation of Football and its planning (Martin, 2009; Martínez and Escudero, 2010; Expósito, 2010; Gallardo, 2012; Aragüez et al., 2013; Wein, 2013; González, 2014; Cometti, 2017), They expose important general foundations, training periodization models, didactic suggestions and recommendations, characterization of the physical demands of the sport, exercises for physical abilities adapted to the context of sport, but not address sufficient elements to guarantee the methodological procedure for the adequate preparation of physical preparation plans.

The existing limitations in the methodology for preparing the action plans physical preparation in the sports initiation stage in Football were revealed in practice in a diagnostic study, based on the application of the documentary analysis method, in which the following problematic situation was determined: deficiencies in the planning of physical preparation of the football team for sports initiation 6-8 years of School “Land and Freedom” primary school in Los Mochis, Sinaloa state, Mexico.

Based on analysis of the state of knowledge and identification of the situation problematic in the context of planning physical preparation at initiation sports in the sport under study, allowed us to formulate the following problem scientific: ¿how to contribute to the improvement of preparedness planning physics in the sports initiation stage 6-8 years in Football?

Since, the essential cause of the manifestation of the scientific problem lies in the aspect methodological so that the planning of physical preparation is real, controllable and individualized, and in correspondence with psychomotor development and sensitive phases of motor development, the general objective is proposed: to design a methodology that contribute to the improvement of physical preparation planning in the training stage sports initiation 6-8 years in Football.

METHODS

For the development of this investigative work, the following methods and/or scientific research techniques:

- Analytical-synthetic: for the analysis of the theoretical and investigative background in the object of study and its corresponding field of action, for the study of the foundations that must support the proposed methodology; and for the interpretation of the results of the application of the survey to specialists and the of statistical processing on the relevance and feasibility of this result scientist.
- Hypothetical-deductive: to establish the generalizations and conclusions that are derived from the results of the application of the survey to specialists on the relevance and feasibility of the methodology that was designed.
- Document analysis: to analyze preparation planning documents physics in the sports initiation team under study.
- Scientific modeling and the systemic-structural-functional: for the determination of the structural components of the designed methodology and the systemic relationships between the components that make it up that allowed the ideal representation of the physical preparation planning process in the sports initiation stage.
- Specialist criteria: for the assessment of the theoretical relevance and feasibility of practical application on different aspects of the designed methodology.
- Survey: used as a technique to obtain the criteria of specialists that assessed the theoretical relevance and the prognosis of feasibility of practical application of the methodology that was presented to them.
- Delphy method: for the statistical processing of the results of the criteria the selected specialists.

RESULTS

When a methodology is provided as a scientific result of an investigation, it is refers, according to Valle (2007), to how to do something, to the establishment of ways, methods and procedures to achieve an end, it takes into account the contents to achieve a determined objective. Therefore, in the context of this investigative work, the contribution of a methodology is aimed at answering how to ideally develop the process of the planning of physical preparation in the sports initiation stage, specifically at age 6-8 years in the sport Soccer (figure 1).

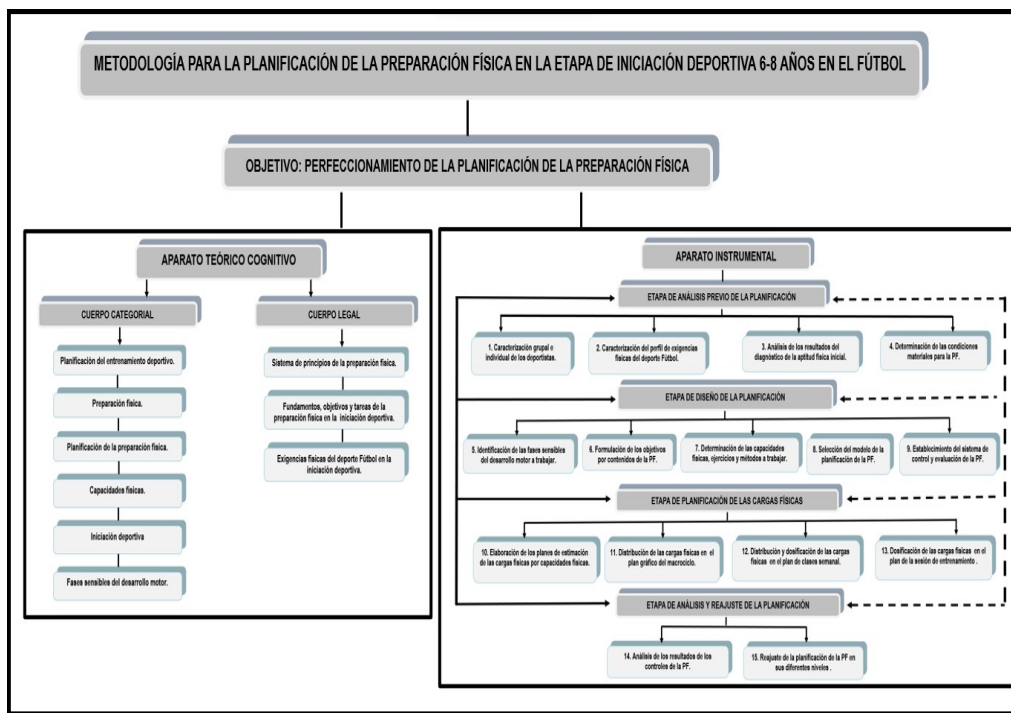
Regarding the structure of the proposed methodology, from the point of view of its design as a scientific result, what was proposed by De Armas et al (2001) is assumed. According to This theoretical-methodological reference, the methodology is composed of two devices structural: the theoretical or cognitive apparatus and the methodological or instrumental apparatus.

The cognitive theoretical apparatus is made up of the categorical body, which in turn includes the categories and concepts and the legal body that is made up of laws, principles or requirements. The concepts and categories that are part of the cognitive theoretical apparatus of the methodology are those that define essential aspects of the object of study. The legal body formed by the principles or requirements refer to those that regulate the process of applying methods, procedures, techniques and means. (De Armas et al, 2001)

The instrumental apparatus is made up of theoretical and empirical methods, techniques, procedures and means that are used to obtain knowledge or to intervene in practice and transform the object of study.

Figure 1

General representation (model) of the methodology for planning the physical preparation in the sports initiation stage 6-8 years in Football.



The proposed methodology aims to: improve the planning of the physical preparation in the sports initiation stage 6-8 years in the sport of Soccer. By Therefore, the methodology that was designed is associated with a system of procedures founded and organized sequentially by stages, which must be carried out to achieve the stated objective (figure 1).

The cognitive theoretical apparatus of the methodology is made up of its categorical body and its legal body. The categorical body contains the planning concepts of the sports training, physical preparation,

physical preparation planning, physical abilities, sports initiation and sensitive phases of motor development.

They are then conceptualized to guide the context where the methodology for planning physical preparation in the initiation stage sporty:

Sports training planning: “(...) represents the action plan or Project that is carried out with the training process of an athlete (or sports team) to “to achieve a certain objective (high performance).” (García et al, 1996). Physical preparation: “biopsychopedagogical process aimed at improving the morphofunctional potentialities through adequate, balanced and progressive physical abilities which are manifested in the strengthening muscular and functional of the organism.” (Collazo et al, 2006)

Physical preparation planning: “it is the development of a plan or project of action aimed at improving morphofunctional potential through the development adequate, balanced and progressive physical abilities in correspondence with the characteristics of the psychomotor development of individuals or level of physical fitness, with the manifestation of the sensitive phases of motor development and the physical demands of physical or sporting activity.” (Heredia, 2023)

Physical capacities: “they are organic, functional and psychological conditions that have a individual in their genetic potential to interact with the environment and demonstrate high physical performance in the field of sports motor actions.” (Collazo, 2020)

Sports initiation: it is a chronological process, during which the subject takes contact with new regulated experiences about a physical-sports activity. (...) he period in which the child begins to specifically learn the practice of one or more sports. (...) is the teaching-learning process, followed by an individual, for the acquisition of knowledge and the ability to practice a sport, since he makes contact with it until he is able to play or practice it appropriately to his functional structure. (Blázquez, 1995)

Sensitive phases of motor development: they constitute phases (or periods) within one's own physical development of man in which accelerated growth in the level of performance of physical abilities which are conditioned by multiple factors endogenous and exogenous. Knowledge of the so-called sensitive periods for the development of each of the different physical abilities by the coach is becomes essential for physical preparation in young people, hence the importance of its use. (Collazo, 2020)

For its part, the legal body of the methodology is made up of the system of principles contributed by Collazo (2020), which will regulate the process of physical preparation and its planning, as well as the scientific-methodological requirements that guide the development of the direction of this process.

System of principles of physical preparation:

1. Principle of appropriate content selection.
2. Principle of the relationship between training potential and recovery.
3. Principle of gradual and gradual increase in loads.
4. Principle of repetition and continuity of the exercise.
5. Principle of the multilateral nature of charges.
6. Principle of proper dosage of loads.
7. Principle of the individualized nature of the charges.
8. Principle of alternation of charges.
9. Principle of adequate use of sensitive periods for the development of physical capabilities.
10. Principle of the need for balance between energy expenditure and consumption during practice of sports physical exercises.
11. Principle of frequent control and evaluation of loads.

In the methodology designed to guide the development of preparedness planning physical in the sports initiation stage 6–8 years old, the requirements are considered following specific objectives and tasks.

Specific objectives:

1. Develop physical abilities according to the motor development of age.
2. Improve health status through physical preparation.
3. Improve socialization and teamwork during physical preparation.
4. Promote educational habits and values that contribute to comprehensive training and achieve physical-sports practice habits.

As part of the legal body of the cognitive theoretical apparatus of the designed methodology, It is also considered essential to have as a requirement to consider the demands or specific physical demands of the sport Football in the sports initiation stage. Soccer is a sport that requires a combination of physical abilities and skills.

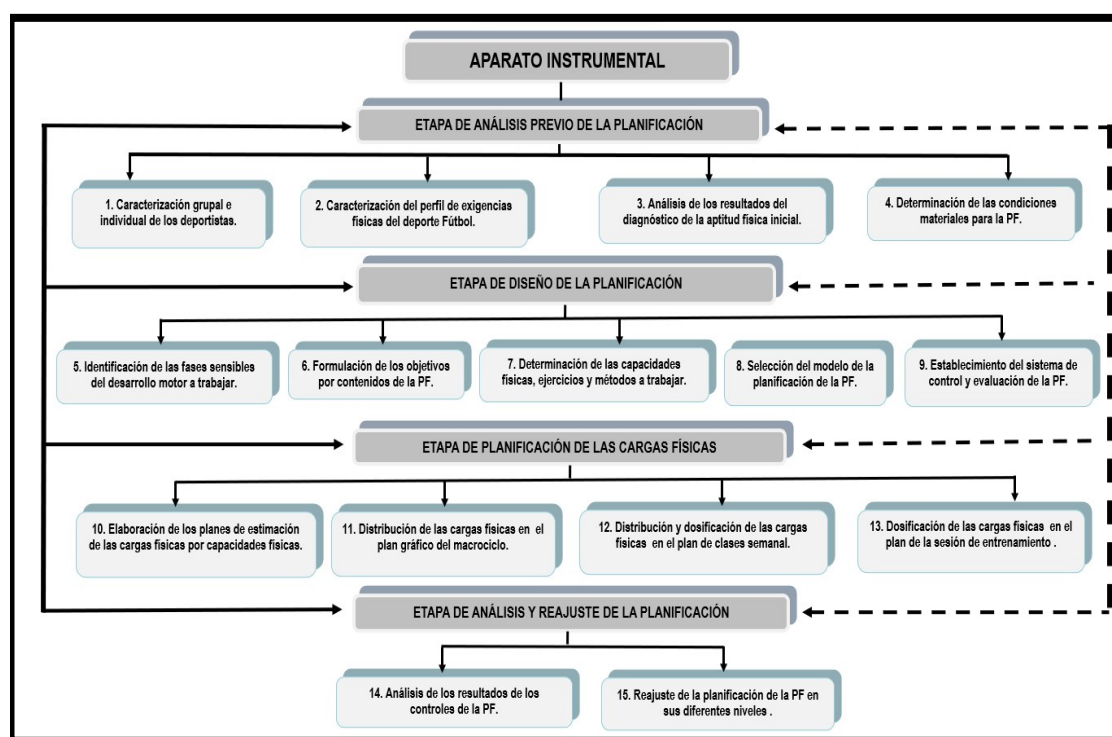
The physical demands of Soccer can vary depending on the player's position on the field, the team's playing style and other factors. However, in general terms they describe some of the main physical demands:

1. Muscular strength: it is essential to face the physical challenges of the game such as contest split balls, protect the ball, make powerful shots and resist collisions with other players, perform explosive movements, quick starts and jumps, which is Crucial in fast game situations and to outmaneuver opponents.
2. Speed: it is essential to move at high speed through the field, both in situations offensive and defensive. Players must be able to change direction quickly and accelerate over short distances.

3. Aerobic and anaerobic resistance: it is required because the players during the match. They must maintain a constant performance in the game, they run long distances and perform actions quickly lasting more than 10 seconds.
4. Joint mobility: it is important to prevent injuries and facilitate fluid movements in the countryside. Players need to be able to make large movements and stretch to reach the ball.
5. Coordination: Hand-eye coordination and coordination between different groups Muscular muscles are essential to make precise movements, control the ball and execute specific techniques. Among the most important coordinative capabilities are agility and balance. Agility allows players to move quickly and change positions. direction efficiently, this is essential to evade opponents and engage in one-on-one situations. For its part, balance is essential to maintain the body control during turns, changes of direction and situations facing to external forces, such as collisions with other players.

Figure 2

Representation of the instrumental apparatus of the methodology for planning the physical preparation in the sports initiation stage 6-8 years in Football.



Regarding the instrumental apparatus of the methodology, it is organized in a way systemic in stages with their corresponding methodological procedures. Therefore, this structure of the methodology reveals the procedure to develop the planning of the physical preparation in the context of the sports initiation stage at age 6-8 years in the sport Soccer (figure 2).

The prior analysis stage of planning has the specific objective: to identify the key information of the context in which the planning of the physical training. The planning design stage presents as a specific objective: to design the planning process, based on the information provided by the development of the planning stage prior analysis, to determine the objectives, the temporal structure of the planning, contents, methods, and forms of control and evaluation that are will be used in the development of physical preparation.

The physical load planning stage shows as a specific objective: develop the scientific-methodological treatment of the physical loads to be applied in each content of physical preparation in the different temporary structures and/or documents planning.

The analysis and readjustment stage of planning projects as a specific objective: provide feedback to the planning process through systematic control and evaluation the planning carried out in each stage, microcycle or work week and training sessions training.

The system of methodological procedures that is structured by stages in the methodology It is an organized and structured set of steps or actions, detailed and sequential, that are followed to carry out the specific process or activity of planning physical preparation in the context of sports initiation in Football. Is used for guide the execution of tasks in an efficient, coherent and, with the aim of obtaining consistent results.

To evaluate the theoretical relevance and predict the feasibility of practical application of the proposed methodology, the specialist criteria method was applied. For the When selecting potential specialists, the following criteria were taken into account: Possess extensive professional experience related in some way to the topic being discussed addresses (10 or more years of professional experience), have postgraduate studies and/or courses specialized related to the planning of sports physical training, having research linked in some way to the topic being addressed, possess a Title Doctor or Master's degree in Physical Culture and Sports.

The group of 15 selected specialists presents the following characterization: eight (8) of They have the title of Doctor in Physical Culture and Sports, five (7) of them have Master in Sports Training, all have 10 or more years of experience professional.

A survey was applied to the selected specialists aimed at evaluating the relevance theory and the feasibility of practical application of the system of procedures methodological. Processing was applied to the results obtained in the surveys statistical, as proposed by the Delphy method.

In the results, it was noted that the evaluations made by the specialists for each aspect are positive, since they were among the categories of Very Adequate, Fairly Adequate and equate, with Very Adequate predominating in percentage frequencies which ranged between 80 and 100 percent.

Table 1

Results of the evaluation of the methodology by the specialist criterion method (absolute frequencies).

ASPECTS TO BE ASSESSED BY SPECIALISTS	MA	BA	A	PA	NA	Total
1. The theoretical foundation and ethodological	12	1	2	0	0	15
2. Formulation of content and sequence logic of the methodology procedures.	11	3	1	0	0	15
3. The effects of methodology.	13	1	1	0	0	15
4. The applicabiliti of methodology.	11	2	2	0	0	15
5. The feasibility of methodology.	12	2	1	0	0	15
6. The relevance of methodology.	13	1	1	0	0	15

Legend: MA - Very Suitable, BA - Fairly Suitable, A – Suitable, PA - Poorly Suitable, NA – Not Suitable.

Table 2

Results of the evaluation of the methodology by the specialist criterion method (cut-off points).

ASPECTS TO VALUE BY SPECIALISTS	MA	BA	A	PA	NA	SUMA	P	N-P	VALORATION
1	0.84	1.11	3.49			5.44	1.36	-0.22	Very suitable
2	0.62	1.50	3.49			5.61	1.40	-0.26	Very suitable
3	1.11	1.50	3.49			6.10	1.53	-0.38	Very suitable
4	0.62	1.11	3.49			5.22	1.31	-0.16	Very suitable
5	0.84	1.50	3.49			5.83	1.46	-0.31	Very suitable
6	1.11	1.50	3.49			6.10	1.53	-0.38	Very suitable
POINTS OF COURT	0.86	1.37	3.49	0	0	N=	1.14		

Legend: MA - Very Suitable, BA - Fairly Suitable, A – Suitable, PA - Poorly Suitable, NA – Not Suitable.

According to the cut-off points obtained, the values were concentrated in the range of Very Adequate, indicating a very high level of adequacy according to the established criteria, for example

Therefore, a consensus or agreement has been reached among specialists. The results exposed demonstrate the high level of relevance of the methodology to achieve an adequate preparation of physical preparation plans in the initiation stage sporty.

DISCUSSION

A methodology was designed to contribute to the improvement of the planning of the physical preparation in the sports initiation stage 6-8 years in Football. The result scientific achievement in the present investigation with respect to the studies that constituted theoretical and investigative background, overcome the existing limitations in the process of preparation of physical preparation plans in the sports initiation stage 6-8 years in football.

The theoretical relevance and prognosis of the feasibility of practical application of the methodology designed by 15 high-level academic specialists and scientist. The results obtained from the application of the specialist criterion method denote a high level of acceptance of the proposal. Therefore, the hypothesis is corroborated raised.

It is recommended to develop prior training and practical application of the methodology in different populations of physical and sports trainers to measure their impact on the professional planning skills.

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