



COMPARISON BETWEEN GLOBAL AND ANALYTICAL TRAINING METHODOLOGIES FOR THE DEVELOPMENT OF TECHNICAL FUNDAMENTALS SKILLS DURING SOCCER INITIATION TRAINING ON 8-9 AND 10-11 YEARS OLD CHILDREN

COMPARACIÓN DE LAS METODOLOGÍAS DE ENSEÑANZA GLOBAL CONTRA ANALÍTICA EN LOS
FUNDAMENTOS TÉCNICOS DE NIÑOS DE 8-9 Y 10-11 AÑOS DE EDAD EN LA INICIACIÓN AL FÚTBOL

Fernando Bernal-Reyes^{1*}, José María Yagüe Cabezón², Marta Zubiaur Gonzalez², Ena Monserrat Romero-Pérez¹ and Omar Iván Gavotto-Nogales¹

¹ Departamento de Ciencias del Deporte y de la Actividad Física. Universidad de Sonora. Reforma esq. Juan Navarrete s/n. Col. Centro. CP. 83000. Hermosillo, Sonora, México.

² Instituto de Ciencias Biomédicas (IBIOMED). Universidad de León, 24071. León, España 34987233019.

ABSTRACT

Previous studies focused on the comparison of soccer teaching methodologies in sports initiation have not obtained conclusive results about the best methodology. Therefore, the main objective of this study was to compare the effect of global and analytical training-learning methodologies on some technical fundamental skills in children of 8-9 and 10-11 years old in soccer initiation. The technical skills evaluated by the test battery of "The Soccer Star Challenge" were running with the ball, dribbling, heading and shooting the ball, in which the kids were evaluated, previously and after 40 sessions of training with each respective methodology. The results yield that both methodologies improved all the technical skills at the end of the training program. Moreover, both methods were effective, since no significant difference was found between them in the progress of the technical skills between the methodologies assessed. For the design of a training-learning program in soccer initiation, we suggest the use of activities that involved both models to develop all the players' technical skills.

Keywords: dribbling, running with the ball, shooting the ball, heading, football teaching methodologies.

RESUMEN

Los estudios enfocados en la comparación de metodologías de enseñanza de fútbol en iniciación deportiva no han obtenido resultados contundentes sobre cuál es la metodología adecuada en la enseñanza del fútbol en esta etapa. Por consecuencia, el objetivo del estudio fue comparar el efecto de la metodología de enseñanza global y analítica sobre algunos fundamentos técnicos en niños de 8-9 y 10-11 años en etapa de iniciación al fútbol. Se evaluaron los fundamentos técnicos mediante la batería de test de "The Soccer Star Challenge". Los fundamentos evaluados fueron el regate, conducción del balón y golpeo del balón con ambos pies y cabeza, antes y después de 40 sesiones de entrenamiento con cada respectiva metodología. Los resultados indicaron que ambos grupos mejoraron en todos los fundamentos técnicos al finalizar el programa de entrenamiento. Además,

ambas metodologías fueron efectivas, ya que no se encontró diferencia significativa entre ellas en la mejora de los gestos técnicos. Para el diseño de un programa de enseñanza de fútbol en etapa de iniciación, se podrían emplear actividades que involucren ambos modelos para mejorar todos los gestos técnicos de los participantes.

Palabras clave: regate, conducción del balón, tiro, cabeceo, métodos de enseñanza en fútbol.

INTRODUCTION

Soccer is considered the sport with the greatest diffusion and the most practiced sport during childhood worldwide. Sports initiation is defined when the individual begins to learn specifically the practice of a sport and after a teaching-learning process, it can be evaluated if the individual is able to apply what has been learned to a real game situation (González *et al.*, 2009). It has been suggested that the most suitable age for soccer initiation is between 9 and 10 years old because the child has many qualities that allow him to assimilate soccer skills with ease (González *et al.*, 2011). For many years, there has been growing interest in the search for the most appropriate method for teaching soccer in the initiation, but the results have not been conclusive (Ortí, 2011; Serra *et al.*, 2011).

Previous studies within the scope of soccer initiation training have only focused on the technical dimension of the players, specifically in the execution of individual skills without contemplating the tactical behavior and the decision-making process of the children. For example, Vera *et al.* (2007) indicate that with the technical or analytical training, a player could perform 25 correct passes, but it cannot be considered if the decision of making the passes were beneficial to the game. In contrast, another tendency, called tactical training, which has tried to compensate for the deficiencies of the technical method, in which it is taught to interpret and understand soccer through game strategies involving cooperative-opposition actions that require not only the player skills but also the correct perception and decision.

*Autor para correspondencia: Fernando Bernal-Reyes
Correo electrónico: fernando.bernal@unison.mx

Recibido: 15 de septiembre de 2017

Aceptado: 18 de diciembre de 2017

Two models of teaching have been proposed; one with technical predominance (analytical or traditional) and the other with tactical predominance (global or alternative) (Vegas, 2010). The analytical model seeks the domain of sports ability through series of sequences that lead the student progressively to reach the proposed goal, this as a previous step to learning tactic aspects and to the practice of game in real situation (Vegas, 2010). With this method the advance goes from the simple to the complex by the decomposition of the technical skills in simpler sequences for their execution. With the analytical model used in soccer initiation, the children improve their movement's coordination with the ball, they learn to do things without understanding them and they depend on teacher's indications when they are in the game. Although the analytical model is the most frequently used during soccer training in kids under the marked influence of the training methodology of individual sports, this approach has some disadvantages: this model is characterized by monotony and standardization. While soccer essence implies diversity and complexity, this method is isolated from the real situation of the game and the competition (Sánchez *et al.*, 2012) and it could limit the creativity development by using exclusively a teaching technique by direct instruction or model reproduction. Analytical model includes individual and mechanical activities based on personal skills, where generally an adversary is not involved in the task; for example passing the ball between players several times without the interruption of a member of the other team. On the other hand, the mechanized exercises can demotivate participants, causing boredom, lack of fun and interest, which can result in the abandonment of the practice at an early age (Vera *et al.*, 2012).

The global model is considered within the alternative models for teaching sports games. It is fundamentally based on allowing the player to build their soccer by placing the practice on the playing field on a creative basis, allowing them to fully play autonomy, taking initiatives and accepting responsibilities. Global model promotes a sports practice based on educational experiences through recreational activities where everyone participates without discriminating to those with less ability. This type of methodology stimulates real game situations as it occurs in the competition. Through the tactical approach, a greater understanding is acquired and more affective behaviors are generated. The exercises proposed by the global model are the tasks where the adversary, the ball and one or various players are involved. This model is based on simplified and modified games or training situations that represent small game scenes. In this way, cognitive processes such as thought, perception, analysis and mental solution are needed, and the player learns by active and exploratory confrontation with the real game environment. In the global model, the coach not only works with the movements and technical skills, but also the mental processes that allow the player to solve difficulties engendered by the opponents and the rules of the game, as well as collaborate with teammates in this solution. However,

there are some disadvantages of global training such as the difficulty in controlling and quantifying individually the training load, volume and intensity. Those responsible for the design of the training must know the internal logic of soccer so as not to set contradictory objectives. In addition, global activities may provide fun and attractive practices to the players (Sánchez *et al.*, 2012; Vera and Vera, 2012). It has been proposed that the training programs based on gaming activities are often more fun than exercises related only to the execution of mechanisms (Allison and Thorpe, 1997; Duran and Lasiera, 1987).

Studies conducted in handball, basketball, volleyball, badminton and soccer have been in search for the best teaching-learning model in sports initiation by comparing global and analytical models (Lopez and Castejón, 2005; Méndez *et al.*, 2010; Sánchez *et al.*, 2012; Serra *et al.*, 2011; Vegas, 2010). However, results have been very controversial and there is still insufficient empirical evidence to determine an adequate methodology in soccer teaching during its initiation phase. Therefore, more research is needed to determine an ideal model in soccer teaching that improves the individual technical skills. In this sense, the main objective of the present study was to describe the impact of the analytical and global model on learning the technical fundamental skills in children of 8-9 and 10-11 years old children who participated in a program of initiation to soccer in the city of Hermosillo, Sonora, Mexico.

MATERIALS AND METHODS

Participants

The study sample consisted of 110 children, 48 were between 8 and 9 years old and 62 children were between 10 and 11 years old. These children were chosen based on the following inclusion criteria: living in Hermosillo, Sonora, Mexico; male gender; having an age between 8 and 9 years old for one category and between 10 and 11 years old for another; not belonging to or have belonged to a soccer team; not having or have had a systematic and / or permanent soccer training; and finally, to accept participate in the project.

For the formation of the groups, an initial evaluation (pre-test) of the fundamental skills (dribbling, running in straight-line and with changes of direction, shooting with both feet and heading of the ball) was performed. A total of 110 children were divided into two categories according to age, 48 participants were from 8-9 years old and 62 participants were from 10-12 years old. Based on the results of these tests, each category was divided in two groups corresponding to training methodologies. In category 8-9 years old, 24 participants were in global training and others 24 kids were in analytical training. In category 10-12 years old, 31 participants trained with global methodology and the others 31 participants trained with analytical methodology. The groups were as homogeneous as possible between them. The allocation of the method to each group was totally random.

Training program

The activities within each program were specific to each methodology assessed and for each category, however, both managed the same motor language (Table 1). The training program lasted 40 sessions and each session had a duration of 90 minutes with a frequency of twice a week. In addition, friendly matches on weekends were played in order to reinforce the knowledge acquired and to motivate the participation.

Measuring instruments

The tests were measured in isolated conditions of the game to evaluate the effect of two training programs on the children individual skills in soccer. The technical skills assessed in these tests were: dribbling, running, shooting and heading. The test used was “The Soccer Star Challenge”, a set of standardized tests that Professor Tim Holt of the University of Southampton has validated with ten thousand young soccer players to describe their abilities. This instrument is used by the English Football Federation to assess the technical level of their promising players. The test implies the performance of six challenges related to the essential skills of soccer in conditions isolated of the game or competition.

The tests were performed before starting the training sessions (pre-test) and at the end of the 40 sessions (post-test). The tests used were: 1. Dribbling test: the player starts from the exit door to execute as fast as possible a run as slalom, making 4 changes of direction, as a dribble. The result is the average of the times obtained in 3 trials. 2. Running with the ball in straight-line test: the player, driving the ball with the dominant foot, must complete an ideal run of 27.3

m as fast as possible. The result is the average of the times obtained 5 trials. 3. Running with the ball with direction changes: the player must cross with the ball a distance of 4.5 m repeating 10 times making 9 turns. In the test, 3 repetitions are performed, each executing a different type of rotation. The result is the average time of all 3 attempts. 4. Heading the ball test: The ball thrower sends the ball through the air so that the header hits it inside a marked space for the kick. When the ball enters the goal, giving a maximum of one pot, one point is obtained and otherwise 0 points. 5. Shooting the ball with both feet: the player makes 3 shoots with the right foot and 3 with the left foot. Depending on the direction and power of the shoot, each pitch can receive 0 to 3 points.

Statistical analysis

The data were analyzed in the NCSS statistical software (2007). First, the normality condition of the data was checked by means of the Skewness test. Using the descriptive statistics the mean and standard deviation of the results of this study were obtained. In order to determine the incidence of each training method on the technical skills (dribbling, running, shooting and heading) of the subjects, the means of the final test were compared with that of the initial test. In order to achieve this, in the case of normality, the T-Student test was used for related samples and, if not, the Wilcoxon-rank test was used. To compare the interaction between methods and age in the development of the fundamental skills, a factorial design of 2 x 2 was used, where the variables were the methodology: global and analytical, and age: 8-9 and 10-11 years old. The delta values (Δ), obtained from the subtraction of the post-test value minus the pre-

Table 1. Content of the training programs for each methodology applied by categories.
Tabla 1. Contenido los programas de entrenamiento asociado a cada metodología aplicados por categorías.

Sessions	8-9 years old		10-11 years old	
	Analytic	Global	Analytic	Global
1	Running	Moves without/with ball in the field	Running	Moves without/with ball in the field
2	Pass	Collectives games to 1 and 2 touches	Pass	Collectives games to 1 and 2 touches
3	Reception	Throw-in as start of offensive play	Reception	Work with number superiority (2vs1) (3vs2)
4	Heading	Small sided games	Heading	Small sided games
5	Dribbling	Defense / Attack game transitions	Dribbling	Defense / Attack game transitions
6	Shooting	Defense / Attack game transitions	Shooting	Free shots and corner shots as offensive plays
7	Control	Ball position	Control	Ball position
8	Running and shooting	Offensive play	Running and shooting	Defense / Attack game transitions
9	Reception and pass	Work with number superiority (2vs1)(3vs2)	Reception and pass	Game amplitude
10	Heading, dribbling and control	Collective games with definitions	Heading, dribbling and control	Collective games with definitions

test value, were analyzed as the response variable. The delta means the improvement achieved by the training with each methodology. A two-way analysis of variance was performed and the means were compared with the Tukey-Kramer test. A significance level of $P < 0.05$ was used.

RESULTS AND DISCUSSION

Effect of the age on the fundamental skills evaluated before the training program

First, the results of the pre-test were compared between 8-9 and 10-11 year old, in order to establish if there were a difference between the ages before receiving soccer training. The results, expressed in table 2, indicate that there were a significant difference ($P < 0.05$) in the dribbling, running the ball and shooting with both feet. The children of 8-9 years old showed higher times in running with the ball in a straight line and with direction changes, compared to children from 10 to 11 years old. In addition, children aged 8-9 years had lower scores on shooting with both feet than 10-11 years old. However, no significant difference was observed in heading the ball test between one age and another.

Table 2. Values obtained in the pre-test of each individual technique by age group.

Tabla 2. Valores obtenidos en el pre-test de cada fundamento técnico por grupo de edad.

Technical skills	8-9 years old	10-11 years old	
Dribbling (s)	24.56 ± 2.09	22.99 ± 2.52	*
Running with the ball in straight line (s)	7.19 ± 0.77	6.54 ± 0.71	*
Running with the ball with direction change (s)	36.24 ± 3.62	34.02 ± 3.26	*
Shooting the ball with right feet (points)	2.17 ± 1.55	4.18 ± 2.51	*
Shooting the ball with left feet (points)	0.58 ± 0.86	0.71 ± 0.99	*
Heading (points)	1.2 ± 0.82	1.35 ± 0.96	

Mean ± standard error * Indicate significant difference between ages in each individual skill ($P < 0.05$).

Children aged 8-9 years showed lower performance and longer test times than 10-11 category, as expected. The participating children, before the training, had not had a directed contact with this sport, just simply the one that they can play or practice at home. For these reasons, younger children have had less opportunity of practicing this sport than children two years older. Similarly, 10 and 12 years old children presented common and distinctive characteristics that made them different from the other ages (Echeverría, 2009). At this age, the children possess a better capacity of motor learning during the childhood; they execute a controlled conduction of the movements, they have better control and coordination of their extremities, they present an increase of strength and speed, among other factors that define this age (Echeverría, 2009). Meanwhile, no significant

difference was observed between ages in heading the ball test. This suggests that heading is not a skill that is commonly practiced in the daily play of a child at this age and hence is not as developed as can be the other technical skills commonly practiced during the play in childhood.

Effect of training sessions with each methodology in the development of technical skills

Table 3 shows the results of the fundamental skills test before and after the training sessions with the analytical and the global method in 8-9 years old children. The players who trained under the analytical method improved the skills by decreasing the time in the dribbling and running with the ball in a straight line and with changes of direction tests; in addition, they showed a greater number of points in the shooting with both feet and heading the ball post-tests compared to the results of the pre-tests ($P < 0.05$). Similarly, the global training had a positive influence ($P < 0.05$) on dribbling, running with the ball in a straight line and with changes of direction, shooting the ball with both feet and heading the ball in children of 8-9 years old (Table 3). Also, better results were obtained in the post-test compared to the pre-test in global model. These results suggest that both the analytical and the global method seem adequate for improving the soccer individual skills of children of 8-9 years old at initiation.

All 10-11 years old players obtained significant progress in the technical skills (Table 4). In the tests of dribbling and running with the ball in a straight line and with changes of direction, the children obtained less time in the final test compared to the initial test. Shooting the ball with the right foot, left foot and heading also showed an improvement, the participants increased the number of points in the post-test than in the pre-test. In the same way, the training sessions of the global model also had a positive and significant effect on all individual skills (Table 4). The children decreased their time in dribbling and running with the ball in a straight line and with change of directions at the end of the training program compared to the initial test times obtained. Also, an improvement in the shooting technique with both feet and heading the ball was observed, since a higher score was obtained in the test performed at the end of the 40 training sessions compared to the initial test.

As mentioned previously, the comparison of results obtained in the pre-test and post-test reveals a positive impact of the analytical and global training programs on all the skills tested. These results are consistent with other researchers developed in the scope of soccer (Chirosa *et al.*, 2003). In our study, all technical skills were improved by both methodologies, contrary to the study by Sánchez *et al.* (2012), who found that one model improved some technical skills in greater extent than others. These authors demonstrated a development in dribbling, running with the ball in a straight line and changing direction, shooting the ball with a dominant foot and heading, because of soccer practice regardless the methodology. However, there was not a progress in the non-dominant foot shooting test in the global method.

Table 3. Results of the pre- and post-tests of the individual skills of 8-9 years old participants in both methodologies.

Tabla 3. Resultados de las evaluaciones del pre-test y post-test de los fundamentos técnicos de los niños de 8-9 años en ambas metodologías.

Technical skills	8-9 years old category			
	Analytic		Global	
	Pre-test	Post-test	Pre-test	Post-test
Dribbling (s)	24.53 ± 2.02	23.04 ± 1.90*	24.59 ± 2.21	22.76 ± 1.87*
Running with the ball in straight line (s)	7.04 ± 0.87	6.65 ± 0.83*	7.34 ± 0.63	6.81 ± 0.60*
Running with the ball with change direction (s)	36.20 ± 3.25	34.44 ± 2.68*	36.28 ± 3.35	33.58 ± 2.99*
Shooting the ball with right feet (points)	2.21 ± 1.95	4.50 ± 1.47*	2.12 ± 1.03	4.04 ± 0.75*
Shooting the ball with left feet (points)	0.71 ± 1.04	1.46 ± 1.02*	0.45 ± 0.58	1.20 ± 0.83*
Heading (points)	1.29 ± 0.90	2.42 ± 1.13*	1.12 ± 0.74	1.87 ± 0.79*

Mean ± standard error * Indicate significant difference between pre-test and post-test in the same method (P < 0.05).

The improvement obtained in the progress of the technical skills is attributed precisely to the application of the training program, regardless of whether it was with the global or analytical methodology. During the frequent exercise and practice of a sport, physiological alterations occur that allow increasing the physical capacities and the development of the technical and tactical aspects.

Comparison of the progress in fundamental skills between ages and methodologies

The statistical analysis showed that the interaction between method and age was not significant, there is no specific age that improves more with one method or another (Table 5). No difference was observed in the delta (Δ) values of the individual skills among 8-9 and 10-11 years old children trained with the analytical method (P > 0.05). In the global method, 8-9 years old children improved more than those aged 10-11 years, only in the running with the ball with changes of direction test (P < 0.05); while the other techniques were not different between one category and another. These results indicate that both training methodologies are equally useful to improve the fundamental skills of 8-9 and 10-11 years old children.

To find out which training method achieves greater effects on the individual skills of children in soccer initiation, Table 5 shows the comparison of the means of Δ values between the global and analytical method in each category. A significant difference was found between the Δ values of the global method (2.70 s) and analytical method (1.76 s) on the running with the ball with direction changes test of 8-9 years old children (P < 0.05). By contrast, no significant difference was found in the Δ values between methodologies in the others individual skills tested in the same age. The results obtained indicate that both the global and the analytical method allow to obtain an indistinct improvement among 8-9 year old players in soccer initiation. Similarly, in the 10-11 years old category, no significant difference was found in the Δ values of all the individual skills between the global and analytical methods (P > 0.05) (Table 5). These results indicate that the global and the analytic methods are suitable to obtain a progress in children of 10-11 years old at soccer initiation.

The results showed that both methods had the same effect on the individual technical skills of children from 8 to 11 years old, with the exception of running with the ball with changes in direction, in the category of 8-9 years. This technical skill was the only and most improved with the global

Table 4. Results of the pre- and post-tests of the individual skills of 10-11 years old participants in both methodologies.

Tabla 4. Resultados de las evaluaciones del pre-test y post-test de los fundamentos técnicos de los niños de 10-11 años en ambas metodologías.

Technical skills	10-11 years old category			
	Analytic		Global	
	Pre-test	Post-test	Pre-test	Post-test
Dribbling (s)	22.99 ± 2.45	21.45 ± 1.54*	22.99 ± 2.63	21.32 ± 2.43*
Running with the ball in straight line (s)	6.55 ± 0.73	6.13 ± 3.62*	6.52 ± 0.69	6.04 ± 0.68*
Running with the ball with change direction (s)	34.24 ± 3.69	32.19 ± 3.60*	33.94 ± 3.60	31.80 ± 3.56*
Shooting the ball with right feet (points)	4.22 ± 2.89	6.45 ± 2.05*	4.13 ± 2.09	5.97 ± 1.43*
Shooting the ball with left feet (points)	0.74 ± 1.36	1.65 ± 1.50*	0.71 ± 1.00	1.58 ± 1.25*
Heading (points)	1.29 ± 0.97	2.52 ± 0.73*	1.42 ± 0.96	2.51 ± 0.67*

Mean ± standard error * Indicate significant difference between pre-test and post-test in the same method (P ≤ 0.05).

Table 5. Comparison of delta values (Δ) in each age group and in each methodology.**Tabla 5.** Comparación de los valores delta (Δ) en cada grupo de edad y en cada metodología.

Technical skills	8-9 years old		10-11 years old	
	Analytic Δ	Global Δ	Analytic Δ	Global Δ
Dribbling (s)	1.49 \pm 1.02	1.82 \pm 1.25	1.54 \pm 0.67	1.67 \pm 0.81
Running with the ball in straight line (s)	0.40 \pm 0.21	0.53 \pm 0.26	0.42 \pm 0.16	0.48 \pm 0.22
Running with the ball with change direction (s)	1.76 \pm 1.12	2.70 \pm 1.52*	2.05 \pm 1.20	2.14 \pm 1.06**
Shooting the ball with right feet (points)	2.29 \pm 1.42	1.91 \pm 0.92	2.23 \pm 1.68	1.84 \pm 1.21
Shooting the ball with left feet (points)	0.75 \pm 0.73	0.75 \pm 0.67	0.90 \pm 0.63	0.87 \pm 0.75
Heading (points)	1.13 \pm 0.79	0.75 \pm 0.60	1.23 \pm 0.92	1.09 \pm 0.70

Mean \pm standard error* Indicate significant difference between methods in the same age ($P < 0.05$).** Indicate significant difference between ages in the same methodology ($P < 0.05$).

method than the analytical method. This can be attributed to the fact that during the game it is more favorable to run with the ball in different directions due to the situations that are presented, compared to the analytical training. In ludic activities, the constant change of direction is practiced to a greater extent since it is rarely followed in a straight line, as it happens in real situations of the game. Also, the time dedicated to this skill is greater in global than in the technical activities. Although, statistical analysis shows that there was no difference between one model and another in the development of the most player's individual skills. This could be because at the initiation phase, the children will try to learn everything and as this acquired knowledge is new, the participants will be able to improve in each technical skills regardless of the methodology used.

There are few studies comparing methodologies of soccer teaching in the initiation stage. Similar results are observed by Sánchez *et al.* (2012) who compared the effect of soccer training with technical and tactical methodologies on the development of some technical skill of Spanish children from 6 to 10 years old at soccer initiation. The authors found that heading the ball and non-dominant foot shooting were improved with technical training; while tactical training was more effective for the learning of running with the ball in a straight line and with change of direction. The improvement in dribbling and shooting the ball with the dominant foot could not be associated with a specific method. Contrary to our results that no difference could be observed between methodologies possibly by the difference in the number of participants and the duration of training; our program was a longer training than those commonly used in previous studies.

Previous studies have confirmed that it is important to structure the activities with a playful environment during sports initiation. Álamo *et al.*, (2011) compared three models of sports initiation teaching to judo in young people who trained for 4 months. The teaching models evaluated were the traditional technical, the vertical model with special

emphasis on technique (technical - tactical) and structural (tactical) vertical. The results showed that the technical-tactical model is the most effective with respect to the level of knowledge and the tactical model was most effective for decision-making during the game. Another study developed by García and Ruíz (2003) compared the effect of the technical training model against the tactical model on the learning of handball in children aged 10-11 and 13-14 years old after 40 training sessions. These authors concluded that the tactical model offers greater knowledge of handball than the technical model. However, in our study global methodology was as effective as analytic does.

In our investigation, although the difference between methodologies in both categories was not significant, a tendency could be observed. Dribbling, running with the ball in a straight line and with changes of direction could be most improved more with the global method than with the analytical method. In contrast, shooting with both feet and heading could be developed to a greater extent with the analytical method as previously described by Sánchez *et al.* (2012). This difference can be attributed to the type of activities that are employed in training sessions with each methodology. Analytical training sessions are more repetitive and therefore can improve closed skills such as shooting the ball with the feet and heading. The time spent in these activities is quantitatively higher in analytical than in the global training and the number of sufficient interventions is assured. In contrast, these activities have little use during the game in global methodology since the aerial game is slight demanded and the child uses the dominant foot to obtain the greater results possible. The global methodology can improve skills that involve displacement like dribbling and running with the ball. Based on these results, it could be proposed a methodology of teaching soccer initiation to children from 8 to 11 years old, combining the global and the analytical training to improve all the fundamental skills.

CONCLUSIONS

The soccer training program used in this research, regardless of the methodology used, improved the individual technical skills. Both interventions were equally effective to improve the dribbling, running with the ball, shooting and heading the ball. Based on the results obtained, a program of soccer education could be designed including the combination of analytical and global exercises to improve all the technical skills of children from 8 to 11 years old in soccer initiation.

REFERENCES

- Álamo, J.M., Amador, F., Dopico, X., Iglesias, E., y Quintana Lima, B. 2011. Modelos de enseñanza en la iniciación deportiva y el deporte escolar. Estudio comparativo en judo. *Apuntes. Educación Física y Deportes*. 102: 88-95.
- Allison, S., y Thorpe, R. 1997. A comparison of the effectiveness of two approaches to teaching games within physical education. A skills approach versus a games for understanding approach. *The British Journal of Physical Education*. 28: 9-13.
- Carratalá, E., Guzmán, J.F., Carratalá, V., y García, A. 2006. La diversión en la práctica deportiva en función del modelo jerárquico de la motivación: un estudio con deportistas de especialización deportiva. *Revista Motricidad*. 15: 148-155.
- Chirosa, L.J., Ponce, F., y Chirosa, I. J. 2003. El efecto de dos formas de aplicación de la técnica de enseñanza mediante indagación o búsqueda, en fútbol base, sobre las capacidades condicionales y los medios técnico-tácticos individuales de la conducción y el control. II Congreso Mundial de Ciencias de la Actividad Física y el Deporte. Granada.
- Duran, C., y Lasiera, G. 1987. Estudio experimental sobre didáctica aplicada a la iniciación de los deportes colectivos. *Revista Metodológica de Investigación y Documentación Sobre las Ciencias de la Educación Física y el Deporte*, 7: 92-128.
- Echeverría, N.E. 2009. Propuesta metodológica para la enseñanza en escuelas de fútbol categorías 10 a 12 años. *Portal Deportivo La Revista*. 2: 1-49.
- García, J.A., y Ruíz, L.M. (2003). Análisis comparativo de dos modelos de intervención en el aprendizaje del balonmano. *Revista de Psicología del Deporte*. 12: 55-66.
- González, S., García, L.M., Contreras, O.R., y Sánchez-Mora Moreno, D. 2009. El concepto de iniciación deportiva en la actualidad. *Retos. Nuevas Tendencias en Educación Física, Deportes y Recreación*. 15: 14-20.
- González, S., García, L.M., Pastor, J.C., y Contreras, O.R. 2011. Conocimiento táctico y toma de decisiones en jóvenes jugadores de fútbol (10 años). *Revista de Psicología del Deporte*: 20: 79-97.
- Méndez, A., Valero, A., y Casey, A. 2010. ¿Qué sabemos acerca de la enseñanza de los juegos deportivos? Un análisis tridimensional de la investigación comparativa de diferentes estudios de enseñanza en Educación Física Escolar. *Revista Internacional de Ciencias del Deporte*. 18: 37-56.
- Ortí, J. 2011. Aspectos metodológicos a considerar en las escuelas de iniciación al fútbol. *Movimiento humano*. 2: 77-87.
- Sánchez, J., Molinero, O., y Yagüe, J.M. 2012. Incidencia de dos metodologías de entrenamiento-aprendizaje sobre la técnica individual de futbolistas de 6 a 10 años de edad. *Retos. Nuevas Tendencias en Educación Física, Deportes y Recreación*. 22: 29-32.
- Serra, J., García, L.M., y Sánchez-Mora Moreno, D. 2011. El juego modificado, recurso metodológico en el fútbol de iniciación. *Retos. Nuevas Tendencias en Educación Física, Deportes y Recreación*. 20: 37-42.
- Vegas, G. 2010. Metodología de enseñanza cognitiva en la iniciación deportiva. *Revista Digital para Profesionales de la Enseñanza*, 7: 1-21.
- Vera Haro, G., Pino Ortega J., Romero Cerezo, C., Moreno Contreras, M.I. 2007. Proposal of valuation tactical-technique by means of a situation of basic collective game in the initiation soccer. *Retos. Nuevas Tendencias en Educación Física, Deporte y Recreación*. 12: 29-35.
- Vera, J.L., Hernández, J.O., y Vera, D.A. 2012. El deporte educativo y la sociomotricidad desde el enfoque del método global referente alternativo para la conformación de un proceso novedoso de enseñanza-aprendizaje. *Revista Actividad Física y Desarrollo Humano*. 4: 63-70.