

## An experience of comprehensive training through soccer Una experiencia de formación integral a través del fútbol

David Almorza Gomar, Gonzalo Martín Pérez Arana, José Arturo Prada Oliveira  
Universidad de Cádiz (España)

**Abstract.** Soccer's current social impact makes it a very powerful tool for the comprehensive training of those minors who come to practice it. It is especially valuable among young people of school age, who may otherwise lose motivation and begin to frequent places that lead them away from their studies. For young people with their dreams, soccer can focus their attention and contribute to their overall education. In this work, we present the results of a program carried out with three soccer teams in the city of Cádiz, Spain. For each team, we analyzed six aspects of interest from the comprehensive training program of the players: academic training; fair play; health, hygiene and nutrition; training for coaching staff; training for parents and social responsibility. The experience was relevant and positive for players, parents, and teams. The results were very encouraging. The interest on the part of the team officials, players, and parents was clear.

**Keywords:** formation; teaching; coaching; football; fair play.

**Resumen.** El impacto social que produce el fútbol constituye una herramienta muy potente para la formación integral de los menores que lo practican. Es especialmente valioso entre la juventud en edad escolar, que podrían de otra manera perder la motivación y comenzar a frecuentar lugares que les alejen de sus estudios. Para la juventud, con sus sueños, el fútbol puede enfocar su atención y contribuir a su educación general. En este trabajo, presentamos los resultados de un programa llevado a cabo con tres equipos de fútbol en la ciudad de Cádiz, España. Para cada equipo, se han analizado seis aspectos de interés desde este programa de formación integral de los jugadores: formación académica; juego limpio; salud, higiene y nutrición; entrenamiento del cuerpo técnico; entrenamiento de los padres y madres y responsabilidad social. La experiencia fue relevante y positiva para jugadores, familiares y equipos. Los resultados fueron muy alentadores. El interés por parte de los equipos, jugadores, padres y madres fue claro.

**Palabras clave:** formación integral; docencia; fútbol; entrenamiento; juego limpio.

### Introduction

There are a number of reports on how to use sports to teach various concepts in different subjects within the educational system. Albert (2002), for example, outlined a basic statistics course that can be taught entirely through baseball examples. In Spain, as in many other European countries, baseball is not a popular game, but it is possible that the same course could be taught using soccer examples. Kvam & Sokol (2004) included soccer as examples of graphical statistics, and Carvalho et al. (2014) employed soccer to teach mathematics and geometry.

The opposite is also possible; different disciplines can be used to explain soccer situations. Sumpter (2016) included the word 'soccermathics' to explain mathematical aspects of soccer. Wesson (2002) used mathematics, physics, and economics to explain different aspects of soccer. In the same way, Reilly & Williams (2003) included biology, medicine, and behavioral science, among others. These explanations can be used as examples to teach different subjects.

What is different is to use *only* soccer as a tool to improve the training (general education) of the students. Jasso, Almanza, Conchas, Rivero, Paredes & Jiménez (2013) developed a project for primary school pupils in Mexico. In Spain, an experience was devised by Rodríguez (2010) that used soccer to improve the level of general education in secondary students. Around the same time, an initial program was developed at the University of Cádiz for primary school pupils (Almorza, Yébenes, Rivas, Geneiro, & Gálvez, 2010). At its completion, the Sport Department of the University of

Cádiz (UCA) and the Aula Universitaria de Fútbol of the University of Cádiz developed a formative program promoting fair play entitled 'En la UCA juega limpio, el deporte edUCA' (fair play in UCA, sport edUCAtes) (Almorza & Yébenes, 2011). This program, recently presented by Almorza & Prada (2019 a) and evaluated by Almorza & Prada (2019 b), obtained relevant national and international awards (Almorza, Yébenes, Bablé, Rivas, Gutiérrez, Gálvez, & Geneiro, 2011).

In this paper, we present a new comprehensive soccer training program, which incorporates some broader life skills through soccer training for pupils of primary and secondary school age (under 13) within the Spanish education system.

### Methods

During the 2018–2019 season, an interesting program developed by the Aula Universitaria de Fútbol of the University of Cádiz (Spain) and the Delegation in Cádiz of the Real Federación Andaluza de Fútbol (Andalusian Royal Soccer Federation), aimed at the comprehensive training using soccer as a basis, was launched.

The program was developed with three soccer teams located in the province of Cádiz, in the south of Spain: C.D. Olímpico U-7, 11 players, 6 years old, only one girl player; C.D. Olímpico U-9, 14 players, 8 years old, all boys; and C.D. Olímpico U-13, 24 players, 13 years old, all boys. Thus, out of a total of 49 players, only one girl played in the same team as the boys. The motivations for women to play soccer were recently studied by Pérez, Castaño, Sánchez, Rodríguez, de Mena, Fuentes & Castaño (2018), but this issue warrants more extensive studies.

Players live in different neighborhoods in the city of Cádiz, mainly San Severiano, Barriada de La Paz, Segunda Aguada, Loreto, and Cerro del Moro, all of which are considered

vulnerable neighborhoods in Spain (Ministerio de Fomento, 2016) and are classified with a medium level of vulnerability.

The following aspects were analyzed in each of these teams during the 2018–2019 season: 1. Academic training; 2. Fair play; 3. Health, hygiene, and nutrition; 4. Training for coaching staff; 5. Training for parents, and 6. Social responsibility.

Academic training refers to the academic qualifications that the players obtain at school. Academic aspects are included during the soccer training sessions so that players realize that soccer and school are not two separate worlds, but that they each form part of the same world.

The Spanish education system is compulsory and free of charge for all children aged between 6 and 16 years old. It receives support from the national government together with the governing bodies of each of the country's 17 autonomous communities, such as Andalusia. In Spain, elementary school and middle school are considered basic education. These are Primaria (6–12 years old), which is the Spanish equivalent of elementary/primary school, and Secundaria (13–16 years old), which would be a mixture of middle school and the first two years of high school in the United States, and secondary school in England and many other countries. The players in this paper were studying at primary or secondary levels.

In the Spanish educational system, three qualifications can be achieved each year: the first at Christmas time; the second at Easter, and the third just before the summer holidays (July and August). When the third qualification is achieved, the student also obtains a final qualification, which determines their next steps within the educational system.

In primary and secondary education, Spain uses a 0–10-point grading scale. The best possible grade (9–10) is called 'sobresaliente' (outstanding), followed by 'notable' (very good) (7–8.9), 'bien' (good) (6–6.9), and 'suficiente' (sufficient) (5–5.9). A grade of 0–4.9 is 'insuficiente' (insufficient) and means the subject has been failed.

In total, 49 players were asked for their grades during the season. This reminded them that their academic studies were important, and that both their parents and their coaches were interested in their academic progress.

Fair play is one of the main parts of comprehensive training. Players play soccer in the same way that they train for soccer, but they live their lives in the same way they play soccer. By awareness of the penalties arising from the yellow and red cards and the additional sanctions, players note that attitude is important. What is more, a green card (a special distinction for fair play during the match, provided by the referee) is a very valuable additional award.

Health, hygiene, and nutrition are an important set of activities. Every player must present a medical certificate to indicate that he or she does not have any kind of illness or medical problem before playing soccer. During the season, and especially at these ages, players have common ailments and suffer injuries during the matches or training sessions. Absenteeism from matches and training sessions because of illness or injuries provides a profile of player health. During the season, several discussion sessions on aspects of hygiene and nutrition were organized for players and parents, and there were also sessions on the different ways that parents could help if their children had any injuries. The Ley

Orgánica 8/2013, of December 9, for the improvement of educational quality (LOMCE, Ley Orgánica para la Mejora de la Calidad Educativa), refers to the promotion of physical activity and a balanced diet. Both of these aspects were also included in this part of the experience that we developed.

Training for coaching staff is an important aspect, and not only in a sport sense. During the season, several improvement sessions were organized for coaching staff. One valuable contribution was providing first aid training to coaching staff so that they could help the players in event of an injury or an accident.

Training for parents is a key issue within basic soccer. Parents must be aware that training their children for life is even more important than sports training. During the season, several discussion sessions were organized on comprehensive training itself, and on related topics such as the dangers of using social media.

Social responsibility activities were developed by the players and the clubs. Comprehensive training includes knowledge of the social reality surrounding these players and the opportunities to improve it. A recent review by Sánchez-Alcaraz, Courel, Sánchez, Valero & Gómez (2020) outlined the personal and social responsibility model through sport, with several references to football.

## Results

### Academic training

For U-13 players, if they pass their exams, they go on to Secundaria; if they fail, they must repeat the final year of Primaria. The final grades, means, and standard deviations are given in Table 1.

Table 1.

Team	Number of players	Number of players who achieved the annual final academic qualifications	Grades
C.D. Olímpico U-7	11	11	Very good (notable) Mean: 7.2 Standard Dev.: 1.5
C.D. Olímpico U-9	14	12*	Very good (notable) Mean: 8.2 Standard Dev.: 1.0
C.D. Olímpico U-13	24	16**	80% passed

\* 2 students were not allowed by their parents to participate in this part of the program.

\*\* 1 student was not allowed by his/her parents to participate in this part of the experience, 3 students did not provide details of their qualifications, and 4 students failed.

The eleven players of the C.D. Olímpico U-7 were asked how often they submitted their homework at school. Nine of them answered that they always submitted their homework, and two of them answered that they often submitted their homework. We thought that this question would only be especially relevant at this age because at six years old, this is the first course of Primaria and children are just getting to understand their new responsibilities.

The 25 players of the C.D. Olímpico U-7 and U-9 were asked to present a timetable about how they organized their week, which accounted for each day from the time they woke until the time that they went to bed. The timetable was required to be presented only once, and the players realized, sometimes for the very first time, that they had a long week with plenty of activities. Annex 1 includes a timetable presented by one of the U-7 players. At these ages, one of the academic objectives is for players to learn how to organize their daily and weekly time; as a way to reinforce this objective, players are asked to present their weekly timetable including soccer

training. This is not necessary at the age of 12, so the U-13 players were not asked to present a timetable.

Parents were asked about their relationship with the school and how they appreciated the academic, social, and administrative management of their children's schools. In the same survey, they were asked about the academic training that the club implemented, and about their general academic satisfaction on a 10-point grading scale. Annex 2 includes this questionnaire. The beginning of compulsory education is a time when parents are used to participating in the life of the school; however, this involvement decreases as their children grow older. For this reason, we decided to ask only the parents of U-7 and U-9 players for the information included in Annex 2.

The mean of the general academic satisfaction of the parents of the U-7 players was 8 points (range 7–10 points) with eleven (100%) surveys answered. The mean of the general academic satisfaction of the parents of the U-9 players was 9.45 points (range 8–10 points) with eleven (78.57%) surveys answered.

### *Fair play*

There are two kinds of cards in soccer: yellow and red. In Cádiz, referees may use another card: the green card. This card is a special distinction for an example of fair play during the match. It is not easy to obtain, and there were no green cards for these teams in this season.

It is an important goal for the eleven players of the C.D. Olímpico U-7 team and for the 14 players of the C.D. Olímpico U-9 team to obtain neither yellows nor red cards. Table 2 shows the number of cards received by the teams and the number of matches played.

Table 2.  
Number of cards received by the teams and number of matches played.

Team	Yellow cards	Red cards	Green cards	Number of matches
C.D. Olímpico U-7	0	0	0	26
C.D. Olímpico U-9	0	0	0	24
C.D. Olímpico U-13	7	0	0	28

U-7 and U-9 players participated in a painting contest to illustrate fair play that was organized by the club, so they could show their understanding of the meaning of fair play. Parents and players participated together in a discussion session entitled 'Soccer fair play.'

### *Health, hygiene, and nutrition*

U-7 and U-9 players were thoroughly monitored for their training attendance. Table 3 indicates how many players failed to attend training because of illness, and the length of any absence throughout the year (2018–2019).

Table 3.  
Number of players and number of days of missed training because of illness during the year.

Month	Number of players		Number of days	
	U-7	U-9	U-7	U-9
Sept 18	0	0	0	12
Oct 18	1	1	3	17
Nov 18	2	8	5	21
Dec 18	3	7	4	14
Jan 19	3	5	6	23
Feb 19	5	6	8	25
Mar 19	0	0	4	9
Apr 19	0	0	4	9
May 19	1	1	7	18
Jun 19	0	0	No training	No training

U-7 players received training on sports hygiene. This training will accompany them for the rest of their sports career. U-7 and U-9 players and their parents attended a discussion session on nutrition and sport performance.

### *Training for coaching staff*

Changes occur in soccer almost every season; tactics and training methods continually evolve, and the rules are frequently modified. Coaches and coaching staff therefore need ongoing training. The following discussion sessions were organized for coaching staff: Frequent injuries in soccer: prevention and treatment; a first aid course (this course was especially welcomed by parents); and a refresher course for coaching staff.

### *Training for parents*

Today, parents can be a problem because incidents, arguments, and poor behavior on their part can have a very bad influence on their children. Their role should be to provide solutions and assistance and to act as role models. Children will be soccer players for a time, but they will be people for their whole lives. Parents must be aware of the role they play, and the example they should give to their children.

In addition, children need special protection from new kinds of dangers coming from the internet and social networks. Parents must know what to do and how to prevent dangerous situations. A discussion session was organized by the city police department for parents and players to address these concerns. As noted, parents also attended a discussion session on nutrition and sport performance and one on fair play.

### *Social responsibility*

When the players are part of any activity related to social responsibility developed by the club, they learn about the social environment around them. This learning is part of their comprehensive training. The club organized a Christmas food collection campaign and participated in a solidarity soccer tournament.

### *Conclusions*

(1) Players realized that academic results are relevant, and they incorporated a homework routine alongside their sport routine. Parents were very satisfied with the participation of the club in the academic life of the players.

(2) Attention to fair play caused the number of yellow cards to decrease and no red cards were issued.

(3) The training on nutrition led to attempts by the parents to improve their children's nutrition habits.

(4) All coaching staff who accompany the players gained first aid knowledge appropriate for the needs of these categories of soccer players.

This program was a preliminary test to improve and provide the correct definition of each aspect to be included. The program used with these three teams will be extended to new teams and clubs during the 2020–2021 season, as this is not possible in the current 2019–2020 season, due to the COVID-19 situation. Our intention is to use the same components in this experience as included in the preliminary program. In the current planning for the next version of the program, we would like to incorporate several indicators that will provide us with an objective final evaluation.

The results obtained from this preliminary program were

very encouraging. The interest on the part of the team officials, players, and parents was clear. The coordination between the University of Cádiz, the Andalusian Soccer Federation and teams was very positive. All those who participated learned from the experience. The main beneficiaries were the children who participated and experienced a different approach to basic soccer training. A strong commitment was made by all those involved to continue with the comprehensive training and promote its benefits for society.

## References

Albert, J. (2002). A baseball statistics course. *Journal of Statistics Education*, 10 (2), pp. 1–14.

Almorza, D., & Prada, A. (2019 a). Fair play, una experiencia formativa. *Training Fútbol*, 282, pp. 1–5.

Almorza, D. & Prada, A. (2019 b). Formación integral a través del deporte: una experiencia a partir del juego limpio. *Revista Universitaria de la Educación Física y el Deporte*. Año 12, núm. 12, pp. 41–45.

Almorza, D., & Yébenes, A. (2011). Decálogo del Juego Limpio en la UCA. *Revista El Drago*, 13, pp. 12–13.

Almorza, D., Yébenes, A., Bablé, J.A., Rivas, R., Gutiérrez, F., Gálvez, J.C., & Geneiro, A. (2011). El deporte educa. *Revista El Drago*, 15, pp. 1–15.

Almorza, D., Yébenes, A., Rivas, R., Geneiro, A., & Gálvez, J.C. (2010). Universidad y fútbol. *Revista El Drago*, 6, pp. 1–19.

Carvalho, A., Pereira dos Santos, C., & Silva, J.N. (2014). Mathematics of soccer. *Recreational Mathematics Magazine*, 1, pp. 35–48.

Jasso, J., Almanza, C.R., Conchas, M., Rivero, J., Paredes, R. & Jiménez, D.J. (2013). Estrategia de promoción de valores a través del fútbol en la escuela «Frida Kahlo» de la ciudad. *Retos. Nuevas tendencias en Educación Física, Deporte y Recreación*, 24, pp. 105–106.

Kvam, P.H., & Sokol, J. (2004). Teaching statistics with sports examples. *INFORMS Transactions on Education*, 5 (1), pp. 75–87.

LEY ORGÁNICA 8/2013, de 9 de diciembre, para la mejora de la calidad educativa. B.O.E. núm. 295, de 10 de diciembre de 2013.

Ministerio de Fomento. (2016). *Análisis urbanístico de Barrios Vulnerables en España. Síntesis Metodológica general del Catálogo de Barrios Vulnerables e Indicadores Básicos de Vulnerabilidad Urbana*. [https://apps.fomento.gob.es/BarriosVulnerables/static/adjunto/Sintesis\\_metodologica\\_general\\_catalogo\\_bbvv.pdf](https://apps.fomento.gob.es/BarriosVulnerables/static/adjunto/Sintesis_metodologica_general_catalogo_bbvv.pdf)

Pérez, S., Castaño, R., Sánchez, A., Rodríguez, A., de Mena,

J.M., Fuentes, J.M. & Castaño, C. (2018). ¿Por qué juego al fútbol si soy una mujer?: Motivaciones para jugar al fútbol. *Retos Nuevas tendencias en Educación Física, Deporte y Recreación*, 34, pp. 183–188.

Reilly, T., & Williams, A.M. (Ed.) (2003). *Science and soccer*. London: Taylor & Francis.

Rodríguez, D. (2010). El fútbol como herramienta para el trabajo de los valores y actitudes en la ESO según las Competencias Básicas. *Retos Nuevas tendencias en Educación Física, Deporte y Recreación*, 17, pp. 67–71.

Sánchez-Alcaraz, B.J., Courel, J., Sánchez, C., Valero, A. & Gómez, A. (2020). El modelo de responsabilidad personal y social a través del deporte: revisión bibliográfica. *Retos Nuevas tendencias en Educación Física, Deporte y Recreación*, 37, pp. 755–762.

Sumpter, D. (2016). *Soccermatics: Mathematical adventures in the beautiful game*. London: Bloomsbury Publishing.

Wesson, J. (2002). *The science of soccer*. London: Taylor & Francis.

ANNEX 1  
Timetable presented by one of the U-7 players.

WEEKLY TIMETABLE C.D. OLÍMPICO U-7							
Time	Name of the player				Name of the school		
	Mon.	Tues.	Wednes.	Thurs.	Fri.	Satur.	Sun.
7:00							
8:00	Breakfa.	Breakfa.	Breakfa.	Breakfa.	Breakfa.	Breakfast	Breakfast
9:00							
10:00	School	School	School	School	School	Soccer Match	Soccer Match
11:00							
12:00							
13:00							
14:00						Lunch	Lunch
15:00	Lunch	Lunch	Lunch	Lunch	Lunch		
16:00							
17:00	Soccer	English	Judo	English		Play	Play
18:00	Training	Play	Soccer	Play	Free Time	Free Time	Free Time
19:00			Training				
20:00	Shower / Reading	Shower / Reading	Shower	Shower / Reading			Homework
21:00	Dinner	Dinner	Dinner	Dinner	Dinner	Dinner	Dinner
22:00	Sleep	Sleep	Sleep	Sleep	Film	Film	Sleep
23:00					Sleep	Sleep	
24:00							

ANNEX 2  
Academic satisfaction survey

ACADEMIC SATISFACTION SURVEY C.D. OLÍMPICO U-7 AND U-9											
Name of the player	Name of the school										
<b>Academic management by the school</b>	Excellent	Very Good	Good	Poor							
Subject content											
Teaching methodology											
Evaluation methodology											
Didactics and technological resources											
Relation teachers-parents											
Student support service											
<b>Social management by the school</b>	Excellent	Very Good	Good	Poor							
School conflict resolution											
Integration of students with special needs											
Sociocultural activities of the school											
Parent care and training											
<b>Administrative management by the school</b>	Excellent	Very Good	Good	Poor							
General state of the school											
Satisfaction with complementary services (secretary, cafeteria, etc.)											
Satisfaction with school staff											
<b>Academic management by the club</b>	Excellent	Very Good	Good	Poor							
Attention to the academic development of the players											
Attention to families when it is required											
Satisfaction with the actions performed by the club											
<b>General academic satisfaction</b>	0	1	2	3	4	5	6	7	8	9	10

