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Sport refereeing in the university curricula of Physical Activity and Sports: a comparative study between Spain and Mexico

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ABSTRACT

University curricula of Physical Activity and Sport Sciences usually strengthen different areas of professional intervention to their students. Physical activity for health, sports training, physical performance, sports management, and physical education stand out. Meanwhile, the sports referee role is commonly perceived by society as an authority that favors or limits the performance of athletes, as well as a rigid, non-flexible entity without major contributions to society in addition to those performed within their work context. The objective of this study was to compare the training on sports refereeing considered by the main university curricula of Physical Activity and Sports Sciences in Spain and Mexico; therefore, a qualitative and quantitative analysis was carried out, according to the National Agency for Quality Assessment and Accreditation in Spain and the Mexican Council for the Accreditation of Physical Culture Education, A.C. in Mexico. The results indicate that only two of the curricula analyzed out of fifty institutions offer content related to referee training in Spain, while in Mexico there are three out of sixteen. In addition, differences were observed in the approaches to the competencies and content of the subjects. It is concluded that the vast majority of university curricula of Physical Activity and Sport Sciences do not include subjects that develop knowledge or skills in sport refereeing, which implies that a large number of students do not receive competencies on the formative and disciplinary role that this figure can play both in the sport context and in society.

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Introduction

The education of sports referees has not been a significant focus of interest in the fields of Sports Science and Education until recent years when studies have begun to highlight the growing concern for referee education among researchers in the educational domain (Adé et al., 2018; Andersson, 2019; Firek et al., 2020; Isidori et al., 2012; Leveaux & Kang, 2021; MacMahon et al., 2015; Rodrigues et al., 2013). The initial references to such studies can be traced back to the work of Johnson and Moss (1976) and Areu et al. (1979), which laid the foundation for the exploration of the relationship between arbitration and education from a psychological perspective. More recently, with a specific focus on the educational context, notable research efforts by Rump (1985), Berg (1990), Merle (2018), Adé et al. (2018), and Hernández-García and Arias-Estero (2020) have incorporated referee practices as part of the Physical Education curriculum, marking significant advancements in this field.

One of the earliest documented educational experiences related to sports arbitration was conducted by Rump (1985) at Vincennes University in Indiana, USA. This initiative offered an elective course titled 'Sports Arbitration'. The course was structured with two primary objectives: (a) to provide students specializing in Physical Education and other curricular areas with knowledge that could be applied after their studies. In the field of Physical Education and Recreation, this course was significant as it helped

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students acquire essential knowledge in various sports through refereeing and provided them with experience for their future roles as educators, coaches, or recreational coordinators; (b) to produce a substantial number of knowledgeable and trained referees. This course not only offered university credits but also provided individual experience. Furthermore, it was designed to create awareness and understanding of the role of referees. Similarly, Berg (1990) emphasized the importance of promoting refereeing in American high schools and educational institutions in general. He cited the example of Elizabethtown College in Pennsylvania, which introduced an elective Physical Education course called 'Refereeing' with the aim of preparing young students to later participate as referees in the Pennsylvania Interscholastic Athletic Association (Almeida & Betancor, 2021).

In Spain, we find more recent examples moving in the same direction regarding the inclusion of referee practices in physical education classes. An innovative initiative in this regard is the Liceo La Paz (2016), a private educational institution that covers various educational stages, including preschool, primary, compulsory secondary education, and high school, in addition to vocational training cycles at both intermediate and advanced levels. Through an agreement with the Galician Football Federation (in collaboration with the Technical Referees Committee), and with referee Rubén Eiriz Mata, who officiates in the Liga 1/2/3, serving as the teacher, Liceo La Paz offers an extracurricular activity titled 'Refereeing: Rules and Social Recognition'. Their website proudly states that they are the 'pioneering institution in Spain to introduce refereeing in the school setting with the goal of dignifying and socializing the role of referees'. The primary topics covered in this educational program include an understanding of the rules, cognitive and behavioral techniques, social skills, and specific English vocabulary. As Rubén Eiriz Mata himself explains, the objective of this extracurricular activity is not to train referees per se, but rather to help young students comprehend the role of referees: 'More than just recruiting referees, which is also important, we want them to socialize, to step into our shoes and understand the values that a referee represents. During recess, you'll now always see children officiating. Instead of playing, many of them want to referee, and among the kids, they no longer view someone who wants to be a referee as a 'weirdo'; there's no teasing; they accept it as just another sport'. For two hours a week, 65 students from 5th grade to 4th year of Compulsory Secondary Education (ESO) learn the rules of the game, English vocabulary, game techniques and tactics, anatomy and physiotherapy concepts, and even have the opportunity to meet elite athletes. 'The goal is for them to learn while having fun. We aim to present the role of referees in other sports, not just in football. We don't want to limit ourselves; we want to socialize and show that refereeing can be a way of life', explains the referee (Merle, 2018).

In addition to offering 'Refereeing' as an extracurricular activity, the same educational institution introduced it as a subject within the complementary block (with a workload of 25 hours) in the higher-level program for Technical Animation of Physical and Sports Activities (currently, due to a regulatory change in Spain, known as Teaching and Sociosports Animation). Furthermore, successfully passing this subject through an assessment with the same characteristics as the one conducted by the sports federation allowed students to obtain the official referee certification. Between the students participating in the extracurricular activity and those in the higher-level program, more than 200 individuals participated in refereeing classes from 2016 to 2018. Nevertheless, the influence of this initiative extends far beyond this core group of students: 'If you exponentially increase that number to include parents, family members, siblings, and classmates, in the end, the school becomes filled with referees' (Merle, 2018).

In 2017, this initiative expanded to other educational institutions in Galicia, such as Salesianos College in Ourense, which began by establishing partnerships with the Galician Football Federation and the Galician Basketball Federation. Regarding the former, students from 5th and 6th grade (aged 10–12) and 1st and 2nd year of Compulsory Secondary Education (aged 12–14) participated in the program. It was coordinated by referee José Antonio Fernández Rodríguez, who officiates in the 2nd Division B and serves as the fourth official in the first and second divisions. This initiative emerged from the Technical Referees Committee (Galician Football Federation) under the leadership of Bernardino González, a former international referee from Ourense, who inaugurated the school. Through a playful, participatory, and active methodology, students engage with the world of refereeing, learning techniques and social skills that promote respect, tolerance, and camaraderie. At the end of the course, they have the option to become members of the federation. In addition to football, this school is involved in the training of

basketball referees through its two representative teams, C.B. Carmelitas Vedruna (female) and C.B. Bosco Salesianos (male).

One of the most recent initiatives identified in Spain is the work of Hernández-García and Arias-Estero (2020) aimed at primary school students. The goal is to raise awareness among students about the roles of referees and promote a more respectful perspective toward them. The proposal was based on six workshops to be conducted within the Physical Education subject in the sixth grade of Primary Education. Three of these workshops involved attending interviews, panel discussions, and roundtable talks with referees. The other three workshops required active student participation, with students taking on the role of referees and evaluating spectator behavior during football matches. Additionally, the proposal was assessed using an initial and final questionnaire to quantitatively and qualitatively gauge students' opinions about football referees. Following the completion of these various workshops, students reported perceiving violence in sports as a negative aspect that hinders their self-realization as human beings. Engaging students in workshops like those presented in this study allows them to experience, reflect upon, and draw well-informed conclusions about the role of referees and the violence they face. This experience can significantly assist them in acting responsibly as individuals.

The educational context of referee training was also the subject of study by Adé et al. (2018) in France. In their work, they aimed to analyze the involvement of students in physical education classes, with students taking on the role of referees. The primary focus of this study was to investigate the experiences of student-referees, identifying their strategies for effectiveness. More specifically, the research sought to identify the concerns influencing their refereeing practice and their responses within the context of physical education classes. The uniqueness of this research was grounded in the use of experimental data and the acquisition of motivational data to gain a better understanding of the experiential meaning of refereeing in sports (course-of-action theory and self-determination theory). The study sample consisted of 74 students, of whom 4 assumed the role of referees, from three secondary education classes (13 years old). The assessment tools included audiovisual recordings, interviews, and questionnaires, combining both qualitative and quantitative methodologies. From the extensive analysis conducted, the results demonstrated that to be effective in the role of a referee, students employed strategies related to the match environment. These results were interpreted by the authors in light of two key points: (1) student alternation strategies as a result of the refereeing activity's configuration (intrinsic motivation and/or demotivation); (2) as a result of the first point, the types of teacher interventions that encouraged students to fully engage in the role of the referee (extrinsic motivation). Ultimately, concerning the teacher's role in the teaching and learning process regarding the role of the referee in the physical education classroom, the key takeaway was that 'the design of learning programs should be based on student experiences to provide learning environments that offer opportunities' (Adé et al., 2018, 429).

From an educational perspective, research on pedagogical models has significantly increased in recent decades, impacting physical education and sports education as well (Casey & Kirk, 2020). When developing refereeing as a fundamental part of the curriculum, it is of interest to consider the theoretical foundation of the Curricular Model of Sport Education (Siedentop, 1987, 2002). Following Wallhead and O'Sullivan (2005), the inclusion of sports refereeing in the curriculum acknowledges the need to adapt to cultural changes, promotes a more positive view of sports, and aligns with the societal needs related to sports. Thus, the challenge of integrating refereeing into the curriculum is not just an educational one but also a pedagogical one.

Furthermore, sports, when approached from an educational perspective, serves as an excellent vehicle for instilling values (Kavussanu & Boardley, 2009). A well-trained professional in the field of physical education and sports, with expertise in refereeing, will be capable of imparting a comprehensive understanding of refereeing to the groups of individuals they interact with. This, in turn, can foster positive attitudes toward refereeing, leading to a more holistic view of refereeing and referees as athletes. Given the significant impact that referees have in contemporary sports, the development of educational initiatives aimed at raising awareness among children and young students about the role of referees is crucial. These initiatives can contribute to shaping a more positive perception of referees among future elite athletes, coaches, parents, and spectators (Philippe et al., 2009). Education within this framework can facilitate the acquisition of positive attitudinal behaviors in the context of both sports and social

interactions, including reduced aggression, mutual respect, enhanced enjoyment of sports, improved game understanding, and more.

Beyond the initial educational experiences and their implementation in the educational domain, the initial training of sports and physical education professionals takes place within the university setting. Both the technical knowledge of refereeing and its role in sports and contemporary society require a more profound understanding. From this perspective, the present study has two primary objectives: firstly, to determine whether or not sports refereeing training is included in the curriculum of undergraduate programs in exercise science and sports; and secondly, to investigate the curricular characteristics of the training provided to students in this regard, including the courses, content, competencies, and more.

Method

To achieve the stated objectives, a descriptive approach was adopted, examining the university curriculum of Exercise Science and Sports in two contextually different countries.

Methodologically, a mixed-method research perspective was employed for both qualitative and quantitative comparative analysis. Qualitative Comparative Analysis (QCA) aims to collect observations from social entities or historical moments in society to study similarities, divergences, and explore their causes (Ragin, 2014). It is a method focused on case studies that facilitate the systematic and formal study of causality, designed to provide tools for optimizing empirical studies comparing a small sample of cases (Mahoney, 2004; Ragin, 2006).

Additionally, the quantitative proposal followed the methodological criteria set by Wimmer and Dominick (2011). The quantitative approach was preceded by a comprehensive review of the state of the field, a literature review, and a qualitative analysis with a strong theoretical and reflective character regarding the university education of professionals in Exercise Science and Sports, specifically in sports refereeing. This qualitative analysis allowed for the understanding and contextualization of the quantitative results. The comparative model central to this research utilized the quantitative content analysis technique, a systematic procedure designed to examine archived information by creating categories that lead to the extraction of objective data. It is considered the most suitable methodology for analyzing the curricula in Exercise Science and Sports through quantifiable categories.

This methodological approach has several virtues (Wimmer & Dominick, 2011): (a) Systematic Nature: It follows established rules and laws in both content and variable selection, as well as in data coding and analysis. This provides consistency throughout the process, and the evaluation follows a single and uniform criterion. (b) Objectivity: It is not influenced by the researcher's perspective. If another analyst were to apply the same method, it should yield the same results. To ensure this, a detailed description of the variables under study is provided, making them explicit and unambiguous, which ensures that the systematic application of the same study table consistently produces the same results. (c) Quantitative: It translates observable facts into numerical data, allowing the conclusions to be based on quantifiable information rather than subjective reflections or impressions. This enables result synthesis and the use of statistics for analysis and interpretation.

The QCA method seeks to bridge these two methodological domains, quantitative and qualitative, with the aim of creating a more valuable methodology for social scientists in general. It achieves this by identifying crucial patterns in cross-case analysis, a characteristic of quantitative analysis (Ragin, 2014; Ragin & Amoroso, 2010). Simultaneously, it serves as both an analytical approach and a set of research tools that, when combined, generate a detailed analysis for each case and each comparison of formalized elements (Legewie, 2013).

Materials

The study utilized the curricula of universities in Spain ($n = 50$) and Mexico ($n = 16$) that offer programs related to Exercise Science and Sports, based on the qualifications offered by ANECA (the National Agency for Quality Assessment and Accreditation) in the case of Spain and COMACAF (Mexican Council for the Accreditation of Physical Education Teaching) in the case of Mexico. Two culturally distinct contexts, each with unique characteristics in higher education, were used to analyze the international and

supranational context. The comparative analysis was based on prior data collection from all the curricula of Bachelor's degrees in Exercise Science and Sports in Spain (regulated by Royal Decree 1393/2007 of October 29, which establishes the organization of university education) and, in Mexico, from universities offering educational programs related to Bachelor's degrees in Exercise Science and Sports and belonging to the Mexican Association of Higher Education Institutions in Physical Culture (AMISCF).

Analysis

The proposed methodology includes the study of several parameters that allow for the comparison of subjects related to sports refereeing among Bachelor's degrees in Exercise Science and Sports in Spain and related programs in Mexico. Three thematic lines of analysis are organized, each with up to three variables subject to study. The lines to be analyzed are: the content of each subject, including objectives and competencies; the practical and/or theoretical nature of the subjects, and finally, the differentiation between mandatory and elective subjects. Based on this framework, some variations in the model used in the proposed methodology have been introduced. We will describe and define the three lines to be studied and their variables:

- a. **Thematic Focus:** Our analysis focuses on subjects with a distinct identity related to sports refereeing. While it is true that many of the subjects analyzed contain content related to the rules of various sports (e.g. soccer, handball, basketball), they cannot be considered part of the thematic focus on sports refereeing training, as they only address technical aspects of the rules in specific subjects.
- b. **Type of Subject:** In Spain, the classification includes the following: subjects of basic training, which are established by the Ministry of Education and are related to the knowledge areas of the Bachelor's degrees; mandatory subjects, which are determined by each university and cover specific content related to the degree; and elective subjects, which students choose, based on the university's proposals, to complement their education. In Mexico, the classification of subjects corresponds to: subjects of the basic stage, which are the subjects included in the curriculum for the first three semesters of the degree; subjects of the disciplinary stage, which are the subjects included in the curriculum for the fourth, fifth, and sixth semesters of the degree; and subjects of the terminal stage, which are the subjects included in the curriculum from the seventh semester until the completion of the degree. Both types of plans include mandatory and elective subjects at all stages.
- c. **Nature of the Subject:** Subjects are classified as theoretical or practical. This differentiation may be somewhat artificial since other factors need to be considered, such as the fact that many subjects may combine both theoretical and practical elements, and this is influenced by the teaching approach of each professor. This potential ambiguity may lead to considering the majority of subjects as theoretical/practical in the Bachelor's degree, but it may not provide a clear differentiation in terms of the actual type of practical work conducted.

Taking these aspects into account, for the purposes of this analysis, subjects that strictly indicate a theoretical focus in their name are considered theoretical. Therefore, subjects that are primarily practical in nature include those aimed at 'practicing' the actual exercise of the profession, i.e. those that provide instrumental tools for its performance and are focused on providing highly technical training. This criterion aims to address whether the design of subjects related to sports refereeing includes a high content of instrumental tools.

The proposed comparative model is represented in a table of analysis that integrates all subjects related to sports refereeing from the universities studied that include this subject in their curricula and the established variables.

In creating the comparative table, several designs were considered, and two of them are presented here: one model in which each variable is described using abbreviations with their corresponding legend, and a second model based on marking with 'X' (which, due to space constraints in this publication, is applied only to the undergraduate level and would be identical for the Bachelor's degree).

This initial study serves as a basis for future research that focuses on the context of Latin America and Europe, aiming to obtain a comprehensive representation of the subject of study.

Table 1. Characteristics, number and percentage of arbitration training courses at universities in Spain and Mexico.

Country	Analyzed universities (N)	Public universities (%)	Private universities	Universities with a subject in arbitration education per country (%)	Public universities with a subject in arbitration education per country (%)	Private universities per country with a subject in arbitration education (%)
Spain	50	30 (60%)	20 (40%)	2 (4%)	2 (100%)	0 (0%)
Mexico	16	16 (100%)	0 (0%)	3 (18.75%)	3 (100%)	0 (0%)
Total	66	46 (69.7%)	20 (30.3%)	5 (7.57%)	5 (7.57%)	0 (0%)

Results

In Spain, there are fifty universities offering Bachelor's degrees in Physical Activity and Sports Sciences, and the criteria we used for analysis are based on two factors: the academic level of their programs and the content of their Bachelor's degree curricula (Master's or Ph.D. programs were not included in our analysis). In Mexico, there are sixteen universities belonging to AMISCF (Mexican Association of Higher Education Institutions in Physical Education) offering Bachelor's degrees in Physical Activity and Sports Sciences or related fields accredited by COMACAF (Mexican Council for the Accreditation of Physical Education). We applied the same criteria for analysis to Mexican universities as we did for Spanish ones. [Table 1](#) provides an overview of the characteristics of the Spanish and Mexican universities included in our study. Meanwhile, [Table 2](#) displays the universities, out of the sixty-six analyzed, that offer courses related to sports officiating. Additionally, we included Spanish courses in sports officiating that were offered in the 2004–2005 academic year by the University of Vigo, as well as those from the 2012–2013 and 2020–2021 academic years at the University of Las Palmas de Gran Canaria (ULPGC) to contrast the variables analyzed over time and identify any similarities or disparities with the current curricular projects of Mexican universities (see [Table 2](#)).

Out of the total number of universities examined ($n = 66$), only 7.57% in both countries incorporate sports officiating education into their curricula, with 3.03% in Spain ($n = 2$) and 4.54% in Mexico ($n = 3$). This indicates that Mexico places a relatively greater emphasis on including these contents in their programs compared to Spain. However, in both cases, it is evident that sports officiating education is an area of little interest in the curricula of Physical Activity and Sports Sciences and related programs. It is also worth noting that 100% of the courses offered are of a theoretical and practical, optional nature. This implies that both countries' programs emphasize the application of knowledge in real or simulated contexts but do not consider sports officiating education to be a mandatory part of the curriculum.

Furthermore, in [Table 3](#), we can observe curricular differences related to each educational project, particularly in the competencies targeted for student development and the credit value of courses focused on sports officiating education. This is elaborated upon in greater detail in [Table 4](#), where we can see the areas of knowledge that are the focal point of the curricular projects [[Tables 3](#) and [4](#) located nearby].

Upon quantifying the content of each of the curricular projects, we note that the technical aspects of sports officiating dominate in all projects, with the exception of the most recent project at ULPGC. Even the University of Vigo, in the case of Spain, and the University of Guadalajara in Mexico center their content primarily on these technical aspects. Additionally, in three of the universities, there is an evident interest in developing ethical competencies that promote the 'being' aspect of sports officiating. ULPGC incorporates these contents in both of the analyzed curricular projects, with a greater emphasis in the more recent project, where these contents are more extensive than the technical aspects of sports officiating. In the ULPGC curricular projects included in this study, we observe a reduction in the technical aspects of sports officiating over time and the removal of the pedagogical and formative aspect of officiating, an area only considered by this university [[Table 5](#) located nearby].

Discussion

The primary objective of this study was to compare the level of sports officiating education considered in the main university curricula for Physical Activity and Sports Sciences in Spain and Mexico. Our main findings suggest that sports officiating education is more prevalent in Mexico than in Spain, with sports officiating-related courses found in only the University of Vigo and ULPGC in Spain, while three Mexican

Table 2. Spanish and Mexican HEIs offering a degree in Physical Activity and Sport Sciences or similar with syllabuses that include subjects related to referee training.

Institution	Faculty	Syllabus	Subject related to arbitration training/year of implementation
Universidad de las Palmas de Gran Canaria, Spain	Faculty of Physical Activity and Sport Sciences	Degree in Physical Activity and Sport Sciences	Ethics and Sports Refereeing/2012–2013
Universidad de las Palmas de Gran Canaria, Spain	Faculty of Physical Activity and Sport Sciences	Degree in Physical Activity and Sport Sciences	Ethics and Sports Refereeing/2022–2023
Universidad de Vigo	Faculty of Education and Sport Sciences	Degree in Physical Activity and Sport Sciences	Refereeing and sports judging /2004–2005
Universidad Autónoma de Nuevo León, Mexico	Faculty of Sports Organization	B.Sc. in exercise science (programme in extinction); school-based (UANL, n.d.) and non-school-based (UANL, n.d.) modalities. Bachelor of Science in Physical Activity and Sport Sciences; school-based (UANL, n.d.) and non-school-based (UANL, n.d.) modalities.	Regulation and Refereeing/2014 to present
Universidad Autónoma de Baja California, Mexico	Sports Faculty	Bachelor's in Physical Activity and Sport (UABC, 2020)	Sports Refereeing/2012 to present
Universidad de Guadalajara, Mexico	University Centre of Health Sciences of the Universidad de Guadalajara	Bachelor's Degree in Physical Culture and Sports (UDG, 2020)	Workshop for judges and sports referees/2014 to present

universities offer courses with such content. However, in both countries, it is evident that sports officiating education is not of general interest to include in curricula for Physical Activity and Sports Sciences, as only five out of sixty-six universities considered it relevant. To contrast these results, an extensive literature review was conducted to identify relevant studies; however, no research analyzing sports officiating education in universities through programs related to Physical Activity and Sports Sciences was identified.

This may be attributed to the current social demands in this field of knowledge, where the main organizations in physical activity, sports, and health on a global scale emphasize the study of physical activity for health (ACSM, 2019; WHO, 2022) over other areas of intervention for graduates in related exercise sciences, such as sports training, sports management, or physical education.

On the other hand, sports officiating education in Spain and Mexico has traditionally been the responsibility of sports federations. From a sociological perspective, this approach limits the understanding of the importance of the officiating role by society, professionals in the field of physical activity and sports, athletes, and the general community. It fails to recognize the nature of the officiating function, the barriers, and the skills required for its performance. Moreover, referees trained under programs established by sports federations do not always have the competence support of higher education institutions. This can narrow the perception of the referee to training focused on knowledge and rule implementation within the context of a specific sport, offering a limited view of the referee's value as an individual and implicit educator in their role (Almeida & Betancor, 2021; Andersson, 2019; Leveaux & Kang, 2021).

This study highlights an important task to be developed by institutions responsible for training professionals in the field of physical activity and sports sciences, in collaboration with sports federations that train sports officials. While the primary aim is not for these academic programs to train sports officials, it does establish a guideline and foundation for these institutions to work together, offering training for sports officiating educators to undergraduate students and university professors in pedagogical and social-humanistic fields. This collaboration can help incorporate interventions into the curricula of programs in both contexts, contributing to not only specialized training in the field but also providing cross-cutting knowledge for students to become better professionals with a greater impact on society.

Additionally, the study has certain limitations, including its design, which does not allow for analyzing the cause-effect relationship of the phenomenon under study. The limited number of exercise science programs or related areas included is also a limitation. While this limitation constrains the study, it also sheds light on the significant gap between the officiating role and its analysis within the university context, indicating the need for further research using designs that provide evidence of the benefits of providing sports officiating education to university students in these fields of study.

Table 3. Teaching projects, competencies and curricular value in HEIs in Spain and Mexico.

Teaching projects / year of implementation	Skills	Institution/Country	Credits
Ethics and Sports Refereeing / 2012–2013	Developing the basic learning contents on Ethics and Sports Refereeing by simultaneously addressing the contributions referred to the advances produced in the scientific and applied knowledge in the field of Physical Activity and Sports Sciences, in relation to the demand for professionals. Providing an answer to the labor market and the high social demand in the world of sport, the educational system, moving on to itineraries of sport performance, physical activity and health, sport management and sport recreation.	ULPGC/ Spain	3
Ethics and Sports Refereeing / 2022–2023	Exploring the values that should prevail as ethical principles in sport and specifically in the field of sports arbitration, whereby the very nature of sport and the sporting action itself (conflicts), they become essential. The above through the analysis of the necessary contents to face and develop the professional practice with efficiency and integrity by creating critical awareness as active agents of social change for the improvement of competitive sport and any level in sports practice.	ULPGC/ Spain	3
Refereeing and Sports Judgment / 2004–2005 Workshop for Sports Judges and Referees / 2014 to present	NR Getting to know and experience the sport, fully adhering to the correct techniques of judging and refereeing, applying the rules, as well as the statutes that govern it, in order to later, using didactic and pedagogical tools, acquire the ability to perform and control related activities at the required levels.	Universidad de Vigo / Spain UDG / Mexico	6 6
Regulation and Arbitration / 2014 to present	Understanding, interpreting and applying the regulations and arbitration of different sports that are considered basic for the graduate's profile, such as: basketball, baseball and softball, soccer and American soccer.	UANL / Mexico	4
Sports Refereeing / 2012 to present	Applying sports refereeing techniques in simulated match situations, based on the theoretical and practical knowledge of the sports manual, to ensure fair and regulated game conduct, with an honest, proactive, teamwork and responsible attitude.	UABC	6

Note: NR = Not reported.

Table 4. Classification of contents by areas of knowledge in the subjects of sports arbitration in Spain and Mexico.

Area of knowledge in the subjects	Ethics and sports refereeing 2012–2013 ULPGC	Ethics and sports refereeing 2022 – 2023 ULPGC	Refereeing and sports judging 2004–2005 U. De Vigo	Workshop for judges and sports referees 2014-actual UDG	Regulation and arbitration 2014-actual UANL	Sports refereeing 2012-actual UABC
History	-History, evolution and importance of refereeing	NA	NA	NA	NA	- History, evolution and importance of refereeing
Analysis of the referee, role in the sport and application of regulations	- Sports regulations at different competitive levels -The Judge in Sport -The referee in individual and team sports	- The training and functions of the sports referee and judges. - Factors affecting sports judging and refereeing	- Judging and refereeing in the context of sporting action - Functions of the judge/referee - Sports regulations - Rules and regulations, their impact on sporting action - Conciliation and refereeing in the Spanish sports field - Arbitral formulas in the international sports context	- Functions and characteristics of the sports judge and referee - Analysis-application of sports regulations - Statutes of Mexican sports federations and associations. - Application of current regulations - Participation in sporting events applying the principles of judging and refereeing.	- Fundamentals, terms and regulations of each sport - Principles of refereeing in each sport	- Rules of the game in different sports - Game situations and conflict management - Sports refereeing technique
Pedagogy	-The referee as an educator; refereeing from a training point of view	NA	NA	NA	NA	NA
Humanism, ethics and values	- Ethics, refereeing and sports judgment - Sources of information on ethics, refereeing and sports judging	- Ethics and sport - The teaching and learning of values in sports practice. - Ethics, refereeing and judgment in sport; the process of sport assessment and its self-efficacy in refereeing.	NA	NA	- Qualities of judges or referees in each sport.	- Values of refereeing in sport (ethics, loyalty, honesty, responsibility). - Referee's behavior and personality
Administration	NA	NA	NA	NA	NA	-Administrative functions in sports refereeing
Sociology	NA	- Sports justice in Spanish sport and in the international sports context	NA	NA	NA	NA

Note: NA = Non applicable.

Table 5. Quantification of content by areas of knowledge in sports arbitration courses in Spain and Mexico.

Areas of knowledge	Ethics and sports refereeing 2012–2013 ULPGC	Ethics and sports refereeing 2022–2023 ULPGC	Refereeing and sports judgment 2004–2005 U. De Vigo	Workshop for sports judges and referees 2014–actual UDG	Regulation and arbitration 2014–actual UANL	Sports refereeing 2012–actual UABC
History	14.28 %	–	–	–	–	14.28 %
Analysis of the referee, role in the sport and application of regulations	42.85%	33.33%	100%	100%	66.66%	42.85%
Pedagogy	14.28 %	–	–	–	–	–
Humanism, ethics and values	28.57%	50 %	–	–	33.33%	28.57%
Management	–	–	–	–	–	14.28%
Sociology	–	16.66 %	–	–	–	–

Conclusions

The vast majority of university curricula in the field of Physical Activity and Sports Sciences do not include courses that develop knowledge and skills related to sports officiating. This implies that a significant number of students do not receive competencies related to the educative and disciplinary role that this figure can play in both the sports context and society. While the professional competencies pursued in these programs do not focus on training sports officials, the analysis conducted underscores the importance of the officiating role at various levels of the educational context, particularly in higher education. Therefore, including courses that help students understand the knowledge, attitudes, skills, and values that sports officials must possess for their work can contribute to the culture and recognition of this activity and, indirectly, educate society in this regard.

In Spain, only one out of fifty faculties of Physical Activity and Sports Sciences included a course related to sports officiating in their curriculum. In Mexico, among the sixteen faculties analyzed, three have a course related to sports officiating. This indicates that in Mexico, despite the low number found, the role of sports officials is considered to a greater extent in the curricula of programs in Physical Activity and Sports Sciences. In Spain, on the other hand, this type of content has been almost entirely omitted.

Significant differences exist in terms of competencies and course content related to sports officiating. These differences not only arise between Spain and Mexico but also within the course contents of the three Mexican universities offering such courses. While some courses focus solely on the rules and their application in specific sports, others include pedagogical, ethical, sports justice, and attitudinal content related to officiating work. This enriches and contributes to the recognition of the officiating role.

In all the cases analyzed, the sports officiating courses are elective subjects that offer between three and six credits. They encompass both theoretical and practical content and are typically offered between the second and fifth semesters of the program. This reflects that among the few curricula offering these courses, there is a common understanding that they complement the overall education of the students.

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