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A holistic approach to the dual career of the student-athlete

María José Maciá-Andreu, María T. Morales-Belando, Lourdes Meroño, Antonio Sánchez-Pato, Juan Alfonso García-Roca
Editors

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Preface

Since the European Year of Education through Sport 2004 (EYES 2004), sport has been recognized as a major cultural, social, and economic phenomenon in the European Union, giving full recognition to the right of sportspersons (e.g., athletes, coaches, referees, sports managers, and volunteers) to combine their academic/work and sports careers (e.g., dual career). To make institutions and sports organisations aware of the need for cooperation to overcome the problems related to the combination of the education/work and competitive sports, to promote awareness on the need to develop dual career paths, and to encourage the exchanges of the best practices at local, regional, national, and European levels, the Annual Conference of the European Athlete as Student (EAS) represents a tremendous opportunity for the development of the European dual career discourse. In reporting some of the contributions presented at the 2022 EAS Conference (Cartagena, Spain, September 27-28), this book is the first foundational resource for all scholars and policy makers who are, or plan to be, proactive in dual career.

The first section is dedicated to Dual Career Policies and presents the development of the Portuguese Dual Career Guidelines and the positive exchanges with Brazil, which signifies that dual career could be a tremendous means for sport diplomacy worldwide. These contributions not only provide concrete knowledge on the development of new cooperation in dual career but could inspire also future actions for establishing international cooperation in and through sports.

In substantiating the emphasis on research of the EAS Conference, the second section encompasses novel contributions on dual career

of athletes taking into consideration the opportunities offered by the sport-technology, the different aspects of the athlete's environment, the bidirectional relationship between sport and education, and the challenges student-athletes with disability have to overcome at personal and environmental levels.

The third section testifies that the annual EAS conference represents a tremendous knowledge-hub and a means for dissemination of innovative EU-funded projects and initiatives at local, national and European levels. The three contributions prove that dual career could be a valuable tool for preventing sports corruption and match fixing, for aligning dual career and for-profit brand values for dual career paths at the workplace, and for offering new opportunities for small business owners, start-up founders and new entrepreneurs for the creation of new venture and small business management within a short period of time.

The fourth and last chapter is dedicated to the advancement of dual career at the academic level by providing two examples of novel support systems in two European countries, Spain and Poland, and the analysis of the potential benefits of using AI for tutoring student-athletes in higher education. These contributions could help envisioning further advancements in dual career at secondary and tertiary education.

It is our hope that the readers could consider this book as an opportunity to think outside their local and national dual career levels, and to be inspired to be innovative in their approaches to help sportspersons pursuing their talent.

Laura Capranica & Mojca Doupona

European Athlete as Student (EAS) – Dual Career Network

European Policies concerning Dual Career

Governance Through Soft Laws in Europe. The Case of Guidelines for Dual Careers of Athletes in Portugal

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Abstract

The Dual Career of Athletes (DC) is, in short, defined as the effortless reconciliation of academic and sporting demands simultaneously. In order to combat the dropout of students and/or athletes and increase their employability, the European Commission created and published the EU Guidelines on DC of Athletes, thus putting the topic on the agenda of many member states and several national and international institutions. Soft laws (quasi-legal instruments called "protocols", "guidelines", "recommendations", among others, without legal force or coercive mechanisms) have been referred to as an interesting tool for multisectoral coordination in several areas of European Policies, especially because they give (or accept) the stakeholder's autonomy, highlighting - of course - the member states. In order to study the importance of soft laws in the implementation of European Public Policies and the DC, we organize this chapter according to the following structure: first, the main characteristics of Dual Career are presented as well the policy paper *EU Guidelines on DC of Athletes*, paying special attention to its historical evolution and drafting process. After, the soft law instruments in the EU Sport Law are introduced with their limitations and advantages. Then, we studied the influences from that Policy Paper on DC Public Policy in Portugal.

Keywords: public policies, soft law, dual career, Europe, Portugal.

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1. Introduction

Many international organizations such as the European Union (EU), which were initially founded as economic organizations (De Búrca, 2011; Sennett et al., 2022; Sonntag et al., 2021), had no genuine sport mandate (Weatherill, 2018). But the role of the EU in sport has grown considerably in importance since 1990s' (Aquilina & Henry, 2010). Nowadays, European sport has a relevant social power in the world having the most interesting competitions and most competitive clubs and athletes in several sports. Because of that "sport is one of Europe's most appealing attractions to third-country nationals" (Sonntag et al., 2021, p. 9). And so, EU must be considered a world actor because its commitment to pursuit collective, coordinated and multilateral solution to global problems and continues to export its regulatory standards to many parts of the world (De Búrca, 2011).

On other side, it is impossible to deny that each sport organisation (as sport clubs and sport federations) has an intermingling regulatory and commercial functions at same time, what sooner or later, takes to a conflict of interests with actual or potential competitors on internal market (Pijetlovic, 2018). This particularity had several moments in European Court of Justice, with several decisions (some even controversial, as said by Rincón, [2007]) that helped to shape the EU Sport Public Policies (PP) and the European Sport Model (Geeraert, 2013).

EU gave several steps to define its European Sport Model (ESM), and when there are EU models, Member States (MS) are under pressure what Claudio Radaelli calls "adaptational pressure" (Radaelli, as cited in Featherstone & Radaelli, 2003, p. 42). But due its organizational complexity and the number of stakeholders as accepted in the White Paper on Sport (WP) (European Commission, 2007), the EU reached to the conclusion that unified definition for it was a difficult mission. Nevertheless, the WP has the relevance to define the main characteristics of our ESM and call of our attention to the social and cultural importance of sport at European level (Pijetlovic, 2018).

But the major step on EU sport public policy was made through Lisbon Treaty and its article number 165 (Sonntag et al., 2021). From 2009, the

Treaty came into force, and EU gained new powers in the EU Sport' Policy arena (García & de Wolff, 2018; Mittag & Naul, 2021; Parrish et al., 2010). After article 165°, the Directorate General for Education, Youth, Sport and Culture (EAC), has the institutional responsibility for running sports policy at EU level. But mainly to coordinate through incentive measures (Weatherill, 2018), as recommendations, sharing of best practices or guidelines (soft law). This article highlights the emergence of an European Sport Policy Arena with specific characteristics and dynamics due to a complex process of governance, globalization, modernization and the European integration; with a relevant support from soft laws such as EU Dual Career Guidelines. We study the case of Portugal, where DC programmes are state centralised (Aquilina & Henry, 2010; European Union, 2016) to see if EU soft laws are influencing the implementation of Public Policies (PP) in MS.

2. Dual career in European Union

It is under the first EU Work Plan for Sport (2011 - 2014), that the Expert Group (XG) *Education & Training in Sport* (later called *Human Resources Development in Sport*) had a mandate to prepare proposals for EU guidelines on Dual Careers (European Council, 2011).

The term Dual Career (DC) was introduced by the European Commission in the White Paper on Sport (European Commission, 2007). However, since the beginning of the 21st century, the European Commission (EC) had shown a growing concern for the multifaceted life of young European sportsmen and sportswomen and had focused its efforts on protecting their access to educational opportunities and employment, in particular (European Commission, 2011), and related with welfare ideologies (Aquilina & Henry, 2010). And, according to these authors, it is also worth noting the designation of the year 2004 as the *European Year of Education through Sport* by the EC (p. 29).

The EU Guidelines on DC (European Comission, 2012) refer, listing several studies in different fields, to the clear benefits of dual career programmes for student athletes, namely in the educational,

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sport, psychological and social fields, preparing them for a (longer) professional life (p. 7). Earlier in the document it can even be read that "the promotion of dual careers supports the achievement of several objectives of the Europe 2020 Strategy (prevention of school drop-out, increase in the number of graduates and higher employability)" (European Comission, 2012, pp. 3–4).

These DC Guidelines were drafted by an *ad hoc* Expert Group (XG) chaired by the Sport Unit of DGEAC, which also provided the secretariat. It was the aforementioned EU XG *Education & Training in Sport* that invited/appointed the different members of the XG, supervised the drafting process and agreed on the final text[1].

This document, immediately adopted by the European Parliament, is sent to all member states as "inspiration for the formulation and adoption of national recommendations, essentially practical, to support dual careers", and serves as a basis for funding by the ERASMUS+ - Sport Programmes, from 2014 to the present day[2].

The EC justifies the creation and approval of these guidelines in the following way:

> DC programmes in sport are relatively recent in most MS. Members States where these provisions have been developed some time ago sometimes lack solid agreements between the sport system and the education sector or the labour market. They may also lack a sustainable legal framework or government policy. These guidelines can be useful to develop and improve the necessary conditions for sustainable DC programmes (European Comission, 2012, p. 3).

Briefly, the document is composed of 36 recommendations, divided into three main areas: I) Public Policies, II) European Dimension and III) Supervision, Control and Evaluation (Table 1).

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[1] Approved by the EU Expert Group *Education & Training in Sport* at its meeting in Poznan on 28 September 2012.

[2] For more info, please see *https://erasmus-plus.ec.europa.eu/opportunities/opportunities-for-organisations/sport-actions*, e.g., *Gold in Education and Elite Sport*, *Study on Minimum Quality Requirements for Dual Career Services*, *Be a Winner in Elite Sport* and *Employment Before and After Athletic Retirement*.

Table 1. EU DC Guidelines areas (European Comission, 2012)

Public Policies (26)	European Dimension (5)	Supervision, Control and Evaluation (5)
Cross sectorial approach (3)	Mobility	Public awareness
Sport (6)	EU Curriculum development	DC Networks
Education (7)	Quality framework	Research, monitoring and evaluation
Employment (4)		
Health (3)		
Financial incentives (3)		

EU DC recommendations by area, in brief:

— *Public Policies*: High Performance Athletes (with or without disabilities, including former athletes) should be considered as "special" citizens by society and by different governmental areas. National coordination of diversified inter-ministerial measures is suggested, through a structure and the development of national guidelines or by modality. The government should contract, recognise and/or fund in a privileged way all governmental/non-governmental, sports/educational or business structures which implement measures to support DC. Relevance should be given to the professionalisation and specific competence of HR working in the field. The government should promote public policies in the area of education that promote curricular flexibility, individualization of responses at all levels of education, enabling social recognition of the profile of Educational Institutions and/or Sports related to DC. Flexibility for professionalization and partnership with companies is suggested, with special importance for funding and professional training during the career, as well as post-career preparation.

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- *European Dimension*: Coordination of support for athlete's mobility (education, profession or training) between different organisations and countries is suggested. The EU should stimulate, monitor and control opportunities for cooperation and sharing of good practices between MS, recognizing the best practices, services and/or institutions.
- *Supervision, Control and Evaluation*: It is suggested to collaborate with transnational networks that bring together the interests of all stakeholders, promote good practices and support the implementation of EU DC guidelines. Governmental and Sport ONGs, governments and the EU itself, should disseminate the importance of supporting DC among athletes, coaches and society in general. All stakeholders should monitor local and international developments, supported by studies and reports, in order to improve the DC framework.

Strangely (or not), there are no indicators, targets or timeframe, nor expected results in the document. This may give more freedom to each MS and all stakeholders, but making evaluations, coordination and supervision even more difficult.

3. The EU soft law in sport. History and conceptualisation

In European Union Public Policy research, the concept of "soft law" may be linked with ancestral European anti-formal jurists (XIX century), based on social law and legal pluralism notion (Di Robilant, 2006). According to Bryan Druzin, the term "soft law" only appeared in diplomatic discourse in the 1980s and has since become a common term in international circles (Druzin, 2017). But Senden and Prechal (2001) referred that legal scholars trace EU soft law from 1962[3] (Hartlapp, 2019). Nowadays is often used to describe governance arrangements that operate individually or in addition to other governance arrangements, hard law resulting from treaties, regulations, and the Open Method of Coordination (OMC). OMC is the European

3 See Official Journal 139/291 and 2922.

Union's method of policy-making that includes the joint definition of objectives and the implementation of the policies and resources necessary to achieve them on a voluntary basis. It promotes multi-level coordination, self-assessment, and European regulation. It is a methodology that can be used in different areas, usually combined with legislation or "hard law" (Borrás & Radaelli, 2010; Shelton, 2000). In order to avoid the negative impacts of competition between member states, the EU (in certain areas) has broadened and diversified its involvement by regulating or coordinating competing policies between member states. Various diffuse modes of governance have been created ranging from hierarchical regulation to "soft coordination" or the Open Method of Coordination (Benz, 2010), or as Francis Snyder told before: the EU effectiveness of law is mainly achieved by processes of negotiation through "the Article 169 EEC procedure, soft law and structural reform" (Snyder, 1993, p. 48). Richard Parrish, in his book *Sports law and policy in the European Union* refers to soft law as non-binding measures adopted by EU institutions. He added "soft law is included within the definition of EU sports law" and as a "pragmatic solution" (Parrish, 2018, p. 17).

Di Robilant says, since the previous EU Treaty, that soft laws as "Recommendations and Opinions" had some legal weight, but this may not be constant (Di Robilant, 2006, p. 500). And, Abbot and Snidal, by their side, argue that "international actors often deliberately choose softer forms of legalization as superior institutional arrangements" (Abbott & Snidal, 2000, p. 423). These new methods of governance may bear some resemblance to "hard law". But because they lack enforceability, uniformity, sanctions or a structure for enforcement, they are classified as "soft law" and contrast, sometimes positively, sometimes negatively, with "hard law" as an instrument for European integration (Dehousse, 2008; Trubek et al., 2005). In the next two tables we list some possible limitations and advantages coming from soft law (Table 2 and 3).

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Table 2. Advantages found in soft law governance. Adapted from Coglianese (2020), Shaffer and Pollack, (2008) and Trubek et al. (2005)

Advantages
Provide greater flexibility for states with lower "sovereignty costs", especially in sensitive areas.
Deal better with uncertainty and law imprecisions.
Accommodate faster new standards or improvements without judicial intervention, over time.
Easier and faster to negotiate in "sensitive policy areas", with less political costs.
Accommodate more and diverse actors in the same policy arena (governmental and/or non-governmental actors).
Allow states and other organisations to be more or less ambitious, depending on their context and resources.
Promote deeper cooperation through diffusing best practices.
May provide a proving ground for innovation and legitimacy, as stakeholders comply voluntarily and have less worries about enforcement or complying with hard law.
Being voluntary may also produce "race-to-the-top" between states and other organisations, including innovative practices, best practices sharing and new standards agreements.
May provide stronger links to hard laws or upgrade standards.

Soft law approaches can be thought preferable because they at least offer something to do when nothing else seems possible. Regardless of the source, (environmental) soft law seeks to achieve the same basic objectives as hard law. The nonbinding nature of soft law also means it does not necessitate the same kind of governmental capacity for monitoring and enforcement that hard laws impose (Coglianese, 2020).

Table 3. Limitations found in soft law governance. Adapted from Coglianese (2020) and Trubek et al. (2005)

Limitations
Soft law lacks the clarity and precision needed to provide predictability and a reliable framework for action (Coglianene, call it "greenwashing" due to his work with environmental' soft law: all goals, criteria and process are reliable, but not the results).
Only hard laws can solve bigger problems as are settled in the TFEU. Soft laws are… soft. They only attract institutions that are already committed with the theme.
Soft law it is a covert tactic to enlarge the Union's legislative hard law competence and does not have relevance itself.
They cover diverse standards and it may take the commitment line to the bottom is some of them, due to the possibility of undercut the force from one to another.
Soft law is a legal instrument that is used to have an effect but it by-passes normal systems of accountability; It only works when the backdrop of threats of enforcement actions (hard law).
Soft law may undermine EU legitimacy because their interventions are more symbolic than substantive and it creates expectations without bringing any change.

From the limitations and advantages described before, we can also find some interesting inputs that can help us to understand why the option for soft laws can be a good option also for sport.

According to Saurugger and Terpan (2021), there are not so many publications on how much EU soft law exist in the EU's political system, comparatively to hard law. But in international law, comparison between "hard law" and "soft law" in governance has a considerable number of works (Saurugger & Terpan, 2021; Terpan, 2015). Within the legislation arena, "hard law" refers to legal obligations from formal issues and binding in nature and "soft law" to laws that are not formally binding, but which can impact behavior (Shaffer & Pollack, 2008). It covers a wide range of instruments of different nature and functions,

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that make it very difficult to contain it within a single sentence or even paragraph. And several times its conceptualization debate is between those who deny its existence and those who believe soft law can solve any problems around consensual difficulties. For French authors, according to Stefan and colleagues, "it represents an immature version of true (hard) law, a body of norms in the process of transformation" (Stefan et al., 2019, pp. 4–5). According to Terpan (2015, p. 70) nor EU Treaty or even the Statutes of International Court of Justice (ICJ) mention soft law as a type of secondary legislation. But based on EU Treaty (TFEU), the EU exercise the Union's competences, through regulations, directives, decisions, recommendations and opinions. These latter two instruments shall have no binding force (European Union, 2008, pp. 171–172) and can be considered soft law among others not listed in that TFEU article (Stefan et al., 2019).

Nevertheless, this policies instruments (soft law) are obtaining international acceptance and recognition (Druzin, 2017; Shaffer & Pollack, 2012).

So, we raised this question to answer: The EU DC Guidelines have some or any impact in the implementation of DC Public Policies or programmes at national level? How was in Portugal from 2012?

4. The importance of soft law (guidelines) to support athletes' dual career in Portugal

The Dual Career of athletes is not a problem that can only be solved through the educational system (given the autonomy, for example, of Higher Education Institutions - see RJIES, Law no. 62/2007 of 10 September) or only through the sporting system (given the specificity of sport and the autonomy of its structures - see the White Paper on Sport, 2007, p.14). This is also the opinion expressed by the European Union, according to which the promotion of dual careers highlights that all sport organisations and all governments have a responsibility to enable athletes to succeed in a DC (European Comission, 2012).

In other words, in Europe and especially in Portugal, the success of DC support programmes may not be possible without the coordination and active participation of educational and sport organisations, public and private institutions, with the Portuguese State.

After the publication of the EU Guidelines on DC of Athletes (2012), six diplomas (laws) were published in this area of support to high performance in Portugal (Table 4):

- *Decree-Law (DL) no. 45/2013, of 05 April*: Establishes specific measures to support the preparation and international participation of national teams or other national sports representations.
- *Dispatch no. 5025/2014, of April 09*: Creates the working group for analysis of the European recommendations and student-athlete status in Higher Education.
- *Dispatch no. 9386-A/2016, of 21 July*: Creates the pilot project of the Support Units for High Performance in Schools UAARE (Unidades de Apoio ao Alto Rendimento na Escola).
- *Decree-Law (DL) no. 55/2018, of July 06:* Establishes the overall programme to achieve the student's profile and competences foreseen at the end of compulsory school.
- *Decree-Law (DL) no. 55/2019, of April 24*: Regulates the statute of student-athlete in Higher Education.
- *Ordinance No. 275/2019, of 27 August*: Generalizes the UAARE at National level.

The DL nº 45/2013, was published immediately after the disclosure of the guidelines, so the incorporation of some of the recommendations, would be unlikely. On the other hand, and despite the fact that this is legislation related to high performance sports agents, conciliation is not within the scope of the diploma.

The creation of the working group (Order No. 5025/2014), multi-sectoral and inter-ministerial, refers to the guidelines as inspiration: "Given the urgency of the matter of dual careers, the European Union has recently defined a set of guidelines regarding this matter,

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recommending to all member states the adoption of supporting policy actions" (Diário da República, n° 70 - 9 April 2014, p. 9759). On the other hand, it accepts and follows the recommendation of multi-level coordination and co-participation of stakeholders by including in the working group representatives of various ministries, representatives of athletes, federations, among others (European Comission, 2012, p. 8 - recommendations n° 1, 2 and 3).

The diplomas referring to the pilot project and generalization of the UAARE do not make any reference to the guidelines but to a local project of support to student-athletes which resulted and inspired the update and national generalization.

Table 4. Sport laws production between 2002 and 2022, in Portugal, related with Sport, including political party, and Prime Minister in the Government and Department (area) in charge

XVI	XVII	XVIII	XIX	XX	XXI	XXII	Portuguese Government
PSD	PS	PS	PSD	PSD	PS	PS	Party as Leader
Santana Lopes	José Sócrates	José Sócrates	Pedro Passos Coelho	Pedro Passos Coelho	António Costa	António Costa	Prime Minister
2004.07.17	2005.03.12	2009.10.26	2011.06.20	2015.10.30	2015.11.26	2019.10.26	Mandate Start
2005.03.12	2009.10.26	2011.06.20	2015.10.30	2015.11.26	2019.10.26	1° tri 2022	Mandate End
Deputy Ministry for Prime Minister	Ministry of Presidency	Ministry of Presidency	Ministry of Presidency and for Parliamentary Affairs	Ministry of Presidency & Local Development	Education Ministry	Education Ministry	Sport
Education Ministry	Education Ministry	Education Ministry	Education & Science Ministry	Education & Science Ministry			Education
Science, Higher Education & Technology Ministry	Science, Higher Education & Technology Ministry	Science, Higher Education & Technology Ministry			Science, Technology & Higher Education Ministry	Science, Technology & Higher Education Ministry	Higher Education
Law 5/2007	- Law 62/2007 - White Book on Sport - EU Treaty - DL 248-B/2008	- DL 272/2009 - Portaria 325/2010	**- EU Guidelines DC athletes** - DL 45/2013 - Despacho 4833/2013 - **Despacho 5025/2014** - Portaria 103/2014		- Despacho 9386-A/2016 - Resolução AR - DL 55/2018 - **DL 55/2019** - Portaria 275/2019		Laws or official legal documents related with Dual Career

* In bold, the document produced has direct reference to EU DC Guidelines.

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The Decree-Law regulating the student athlete status in higher education, probably based on the recommendations/conclusions of the working group created for this purpose in 2014, categorically states: "in line with the European Union's recommendations for the adoption of mechanisms to support the development of dual careers of student athletes" (Diário da República, nº 80 - 24 April 2019, p. 2267). The recommendation nº 10 (in the area of Education) seems to have been the main influence for the creation of this specific statute.

These observations in the implementation of measures provided for in Guidelines (soft law) in Portugal and with regard to DC, will not be very different from those observed in the case of directives (hard law) in the most diverse areas. Falkner et al. (2005) in this respect concluded the following:

> The implementation of EU law is neither mechanical nor automatic, nor efficient. It is slow (only about 11 per cent of the cases studied were transposed correctly and on time), painstaking (a large number of processes are required to achieve reasonable levels of compliance) and incremental (often many steps are required before a directive is fully implemented) (Falkner et al., 2005, p. 343).

5. Conclusions, limitations and further steps

A huge body of soft law has been so far developed by EU (Robilant, 2006), specially by the EC (Batta, 2007, p. 4). Recommendations or guidelines are one of the main means of expression for most international institutions. One reason being that their statutes or treaties only rarely permits the adoption of instruments that are binding on states (Friedrich, 2013, p. 22). Another reason raised up by Terpan (2015), is that soft law is intergovernmental-oriented and hard law is supranational-oriented. By other hand, the independence of sports organizations and their right to organise themselves through appropriate associative structures was recognized by the Nice

Declaration in 2000[4], what can also justify the EU option for soft laws on EU Sport PP.

Although with some controversies about their efficiency, soft policies have been used by the EU for PP coordination in several areas (employability, economy, health and sports). Guidelines or recommendations are among the various policy instruments inherent to this soft law methodology. The recommendations have even been used by other public and private organisations (UN, WHO, UNESCO, OECD, ILO, etc.).

The recommendations for the implementation of Dual Careers programmes in EU Member States that support the conciliation between sporting and academic (or professional) life, have been on the European and National political agenda, and implemented in various ways. In the case of Portugal, the contribution to its implementation has not been linear, as it is possible to identify publication of laws with, but also, without reference to these recommendations. This particularity may make it difficult to refer its effective contribution in Portugal as positive; but it will need further research.

Identical conclusions are referred in a first attempt to know the level of implementation of the Guidelines carried out in 2016 by the XG *Human Resources Development in Sport*. This report (based on the responses of 28 MS, observers and one EC member), concluded that in the areas of Education and Sport there was an active development after 2012 (in contrast to the previous period). But, they point out, that this active development may not be completely related to the recommendations of the EU (Expert Group on Human Resources Development in Sport, 2017).

It would also be interesting to assess in greater depth the contribution that the Guidelines have made to the support programme for Dual Careers in Portugal (e.g. UAARE), involving the whole context (federations, clubs, schools, employers, etc.) and the different (possible) programmes implemented and not only the legal diplomas.

4 Please see European Council. Conclusions of the Presidency. Annex IV, Declaration on the specific characteristics of sport and its social function in Europe, of which account should be taken in implementing common policies. The Declaration is available at https://www.europarl.europa.eu/summits/nice2_en.htm accessed 06 June 2022.

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The Portuguese Experience for Dual Sport-Academic Career: Possibilities for Brazil

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Abstract

International research indicates that a regulatory framework encourages institutions, being schools, universities and/or sports' clubs, to take measures so ESA (elite student-athletes) can successfully reconcile the routines between sport and education. Portugal, over the last 30 years have been debating the subject, introducing laws, revising them, and then improving it through time. Meanwhile, in Brazil, there are almost no debates and the laws in discussions are not able to cover all the existing problems. Given this scenario, we analyzed some of the Portuguese laws, which, among others, established the general framework for the sports system, created a special regime for athletes to enter universities and defined specific supports for the development of high-performance sports. Some measures could be easily implemented in Brazil and others could be adapted to the national reality. However, the key objective of this study is to show that these young student-athletes need a formal structure with support to facilitate a successful dual-career.

Keywords: dual career, legal framework, holistic education.

1. Introduction

The development process of high-performance athletes has been understood as a period of life in which the youngsters will go through several sport and non-sport transitions (Stambulova et al., 2020). The demands faced by the student-athletes, whether from the club, the school, or the family, have shown researchers the importance of analyzing a broadened scenario, which leads to observing the athlete evolution from a holistic perspective (Wylleman, 2019). Currently, understanding the conciliation between sport and educational demands as a research object has gained importance in different countries (Ryba & Stambulova, 2013), with analysis of distinct political and social organizations for the development of programs for assistance of high-performance athletes (Torregrossa et al., 2021).

In addition to the training routine, treatment of injuries, recovery, etc., the holistic development of the athlete also requires the analysis of aspects such as the local culture, the sports market offered in terms of financial return, the legislation in place, the family context, and especially, the educational background (Wylleman, 2019). The conciliation of the sports and educational routine tends to provide the young student-athlete with better conditions to perform their routine, minimizing negative impacts that can lead to physical and mental stress, abandonment of one activity over the other, contributing to less traumatic transitions (Knights et al., 2016; Kuettel et al., 2017; Stambulova & Wylleman, 2015).

Over the past decades, Portugal has built a wide debate about the importance of sport in its society, culminating in laws that highlights different aspects of sports' practice in different dimensions, including the recognition of the condition of the high-performance sports-athlete (e.g. Decree-Law n° 272/2009 of October 1st), offering specific rights and duties to the student-athlete at different stages of his career (e.g. Decree-Law n° 55/2019 of April 24th). This legal framework serves both the athlete in his student condition during basic education[5], and

5 See more at: https://uaare.dge.min-educ.pt/pt/uaare/internacional

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the university athlete, providing in specific cases, the opportunity for them to enter higher education by their sports' merit.

These initiatives contrast with countries where young athletes do not have formal structures to face the challenges of dual career, such as Brazil, characterizing it as laissez-faire (Costa & Figueiredo, 2021), where the absence of legislation may contribute to the difficulty of disciplining institutions - sports and educational, whether for basic education or higher education - mitigating negative practices (Rocha et al., 2021). Thus, athletes become responsible for negotiating their needs without the due legal support, making it even more difficult for their development: whether in sport, in the psychosocial dimension or in the academic field (Costa et al., 2020, 2021; Miranda et al., 2020). The debate about sports development, analyzing the athlete's career considering its concomitance with educational formation has been held (Nogueira, 2022) showing the need for and importance of the constitution of public and institutional policies for assistance programs for student-athletes (Capranica et al., 2015; Costa & Figueiredo, 2021; Costa et al., 2020).

Therefore, the aim of this study was to analyze the Portuguese experience in terms of regulation, development, and promotion of good practices regarding dual sport careers as a reference for Brazil. The research will focus on policies aimed at higher education, a factor that enables the insertion of these youngsters in the formal labor market (Lopes, 2022), consequently creating opportunities for life after the sports' retirement.

2. Methodology

This essay is characterized as a documentary review, with an analysis of the legislation relevant to the theme of sports-academic career conciliation in Portugal. The country was chosen for the following reasons: (1) it has a sports' system similar to Brazil, as it is developed outside the school environment (clubs, training center etc.); (2) it has a national sports legislation that recognizes the student athlete and contemplates compulsory actions to the involved institutions.

After reviewing the laws, the ordinances, and the decree-laws available, dating back to the period from 1990 to 2019, we mainly analyzed Decree-Law (DL) n° 272/2009 and the updates that came after. We understand it as an important moment regarding the Portuguese legal framework, considering the legislation in place until that moment.

3. The value of sport for Portugal

Through Law no 1/1990, Portugal established a sport system aimed at promoting and guiding physical activity. Within this context, the legislation established that high-performance sports constitute a determining factor for sports development and in 2007, a new provision ensured that the State should "support and develop regular and high-performance sport practice, through the provision of technical, human and financial means, encourage the training activities of sports' agents and exercise inspection functions, under the terms of the law" (Decree-Law no 7/2007, p. 357).

Decree-Law no 272/2009 was responsible for creating an integrated system of support for the development of high-performance sport, with specific measures, conceptualizing in a more judicious manner the meaning of high-performance athlete. Furthermore, the same decree states that high performance sport is of public interest as it "constitutes an important factor of sports development and is representative of Portugal in international sports competitions" (p. 7081).

Portugal, over the years, began to consider the sport condition as a social, cultural, and diplomatic asset developing policies to promote the practice of physical activity. The recognition of the role of high-performance sport in that society has allowed the production of extensive legislation, presenting mechanisms to discipline sport and academic institutions to ensure holistic development to ESA. This may include priority of enrollment in classes, the flexibility of the schedule, guarantee of academic rights when needing to be absent for sports commitments and mentoring programs (Costa & Figueiredo, 2021).

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4. The high-performance sportsman/woman in Portugal

The high-performance athlete in Portugal has the possibility to apply for what is called *Estatuto de Alto Rendimento* (High Performance Statute). This recognition allows him/her access to some academic rights, providing greater stability to perform both as a student and as an athlete.

High-performance is defined as "the practice of sports in which the practitioners obtain classifications and sports results of high merit, measured against international sports' standards" (Decree-Law no 272, 2009, p. 7080). Moreover, the high-performance practitioners are divided into three levels (A, B, C), reserving greater support for the most qualified, being defined for Olympic and non-Olympic sports from their highest sports qualifications (Decree-Law no 272/2009).

As for the sportsmen and sportswomen in development stages, they are classified as high-performance who show probability of achieving success at the international level, evidenced by the following conditions: (1) have participated in renowned international competitions representing the national team; (2) have participated in European or world championships representing the national team; and (3) have obtained significant results. In addition, the practitioner must be of an age that allows his gradual evolution into adulthood and have a preparation compatible with high-performance level.

The same law specifies the qualification of collective sports and the qualification of citizens with disabilities as high-performance sports practitioners. Also, the government, with the support of the sports' federation and the Portuguese Sports Institute - currently Portuguese Institute of Sports and Youth (IPDJ), is responsible for determining the level of sports competitions "according to the criteria of sports selectivity, based namely on a minimum participation of countries, teams or sports practitioners with a certain classification in the ranking of the modality" (Decree-Law no 272/2009, p. 7082).

5. Access to higher education

The DL no 272/2009 maintains the special regime of access to higher education for high-performance athletes, established by Decree-Law no 393-A/99, guaranteeing the enrollment in university courses if the ESA "are approved in the high school subjects corresponding to the entrance examinations required" (Decree-Law no 272/2009, p. 6736-(2). The 43rd article further determines that the ESA has a period of three years, from their sports retirement, to benefit from the special regime of access to higher education. Moreover, "whenever indispensable for their preparation, high-performance sportsmen and women may obtain the transfer of universities, through a declaration issued by the IPDJ" (Decree-Law no 272/2009, p. 7085).

6. Expanding rights in higher education

In 2019, DL no 55/2019 expanded support for ESA, promoting the sports representation of higher education institutions and student associations, encouraging the practice of sports in that context, continuing the practice developed during school years. This new statute for student-athletes in universities defines the eligibility requirements, the duties, and the corresponding rights.

To benefit from the status, the student-athlete must: (1) have participated by the Higher Education Institution in national or European university championships (under the aegis of FADU or EUSA, respectively) or participated by the national university selection for Portugal, (under the aegis of FISU); (2) have participated in national competitions of sports federations or in international competitions, in which the national sports federations are integrated; (3) be registered as an athlete in the sports service of the higher education institution and have participated in regional championships or in the trials for the national university championships, (4) have participated in national school championships or international school competitions; or (5) be affiliated to a sports federation.

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Regarding the sports' merit, to obtain the status, team players must have represented their team in at least 60% of the games and participated in at least 75% of the training sessions. Individual athletes, on the other hand, must be ranked in the first third of the table in national competitions. As for academic achievement, student-athletes in universities must have a minimum of 36 credits in the academic year prior to their request, "or all the credits in which they were enrolled, if their number is less than 36" (Decree-Law no 55/2019, p. 2268).

In this way, it is given, in the period not less than one year, the minimum rights to all these students, such as justification of absences, changes in exam dates, priority to choose schedule and special period for exams. Thus, establishing better conditions for participation in higher education sports competitions, "contributing, also, to the increased relevance of these competitions" (Decree-Law no 55/2019, p. 2267).

7. Obligations for the academic institutions

The 15th article of DL no 272/2009 states that in school life, at any level, ESA should be granted, "the school schedule and attendance regime that best suits their sports preparation" (Portugal, 2009, p. 7083). In the same way, attendance in different classes and/or school performance by subjects may be allowed. In this sense, possible absences during the period of preparation and/or participation in competitions should be relieved, upon proof through the IPDJ. If this period coincides with exams, the dates of the exams should also change.

In educational institutions that are attended by ESA, a teacher will be appointed to monitor the progress of youngsters to "detect any difficulties and propose measures for their resolution" (Decree-Law no 272/2009, p. 7083). It is the responsibility of this teacher to propose reinforcement classes, if necessary, to make up for possible absences due to sports practice, so that the student does not arrive with a deficit in universities. This teacher also has the duty to make a report on the school performance, at the end of each school year, of the practitioners

who benefit from the support measures. In addition, the students will also have the right to transfer from schools when the sporting activity justifies this, or even to attend classes at another school.

Likewise, ESA enjoy "preference in attending training courses for coaches of the sport they practice, whatever the specialty and the promoting entity" (Decree-Law no 272/2009, p. 7085). They may also benefit from academic scholarships, in Portugal or abroad, even if it is not related to their sports' field, whenever the circumstances justify.

8. Obligations of the sports institutions

Sports federations must submit an annual report on high-performance athletes eligible for public support. This report must contain, among other information: results obtained, proof of physical fitness, international norms and technical regulations that justify the qualification of the same as high-performance, a development program plan, and a funding source.

IPDJ is responsible for the application and control of important support measures to high-performance sports such as: a) organize the registration of high-performance practitioners, either in sports or academic/professional; b) secure the support measures are ensured; c) financial co-participation to the programs presented by the federations; and d) evaluation of the results obtained. This organization is also responsible for reporting to the Ministry of Education and Federations, any "information that is transmitted to them by the educational establishments regarding the regime and the school performance of high-performance sports practitioners" (Decree-Law no 272/2009, p. 7083).

9. Other rights and duties

Those who have been part of the Olympic or Paralympic Project for at least 8 years, after the end of their sporting career, are guaranteed the

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right to "receive a temporary reintegration grant, of an amount equal to the level of the last grant they received" (Decree-Law no 272/2009, p. 7086).

Besides the benefits already mentioned, student-athletes are entitled to: (a) special conditions and priority use of the sports infrastructure of high-performance centers; b) prizes in recognition of sports results; c) specialized medical assistance; d) special insurance; e) voluntary social insurance; f) benefits in contributions to the social security system while in the high-performance regime; g) apply to internal admission process of public administration bodies as long as they meet the general conditions.

However, the decree also foresees the duties of ESA: a) maintain an exemplary behavior; b) be available for public appearances; c) submit to anti-doping examinations, randomly; d) integrate national teams when called upon; and e) inform when they want to leave the high-performance programs.

10. Discussion

The current laws, as well as the cultural understanding about sport, places Portugal as a reference in terms of recognition of the athlete and his/her role in society. The importance given to sport and to the education of its athletes is clear through the legislation that offers mechanisms to include its athletes in formal education, offering these kids the opportunity to attend higher education, and thus, enter the formal labor market after their sports retirement.

The short career of the ESA and the dual career, which can become triple if we consider work, studies, and training, can create complex challenges for the holistic development of these youngsters. There is even a tendency to make a conceptual upgrade regarding dual career, considering it as multi-career, given the multidimensional nature of the life of a student-athlete.

Along with the demands in terms of high-performance sports practice and high standards in academics, other interests also emerge

in the life of the student-athletes such as social, personal, and family, and only all these combined allow them to be an individual. Tough (2012) has shown that one of the most important factors for academic and professional success of students in the U.S. is the structure offered to them. This research supports the idea that ESA needs an environment that also looks after their education through the implementation of the mechanisms mentioned above. The negative impact caused by the training routine, the high demand for results, and the necessary travel could and should be softened by public policies.

Some of the proposals presented are straightforward, with no direct costs for the State and/or universities, such as the possibility of changing schedules or exams; priority in choosing their subjects in universities; a specific regime for admission to higher education; and justifications for absences due to sports commitments. These are measures that can be adapted and implemented in Brazil to encourage high-performance athletes to continue studying and be prepared for the formal labor market.

Other measures as the qualification of high-performance athletes would need more research to establish a national standard. Portugal is a country with a small territory, and part of the European Union, where there are several other countries in an area that resembles Brazil, in geographical terms. Therefore, in their perception, the elite athlete has all the conditions to be always competing in international events. In Brazil's scenario, we question how we can measure the level of our athletes to be in accordance to the international level of high-performance athletes - especially if considering this as a decisive criterion for access to higher education. A fundamental aspect of the Portuguese experience – that Brazil can really learn – is the understanding of that society around sport, and the attention given to the education of high-performance athletes over the years. A good example was the support given to student-athletes at universities, aiming to expand the practice of sports in that context. While Portugal advances in creating laws and programs that recognizes the student-athlete, values sports and build conditions for athletes' development, Brazil made little progress in its legislation to promote sport between 2000 and 2016, showing legislators have no

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concern with the issue (Athayde et al., 2016). In fact, the changes in legislation were made just to meet commercial interests and most of the time focused on football.

11. Conclusion

We believe laws can be of great help to change how society view sports and athletes in Brazil. International research indicates that a regulatory framework would encourage institutions (sports and non-sports) to take more care of their student-athletes - or at least initiate concrete proposals and actions to meet their real needs. Measures such as the establishment of a psychological support network to deal with the stress of the intense routine, policies for special admission to higher education, and financial and structural support for high-performance training, help ESA have a successful conciliation of the routines between sport and education (Capranica et al., 2022; Guidotti & Cortis, 2015; López de Subijana Hernández & Equiza Vaquero, 2018; Stambulova & Wylleman, 2019). Thus, the development of public policies that promote dual careers favors student-athlete to break the barriers that hinder them to achieve their full development, both as an athlete and as a human being.

Due to the specificity of the student-athlete's condition, who needs to be absent from classes to compete at various times, it is essential that they have proper treatment within the educational system, through legal mechanisms. We have countless cases of post-athletes who ended their careers and did not prepare themselves (even if they earned significant amounts of money in their glory years in sports) and faced both psychological and financial difficulties. We hope that through this reading, we can promote reflection and greater clarity as to the path we can take to improve this scenario, giving athletes the opportunity to study and have a harmonious career transition to have a dignified life after their retirement from sports.

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Dual Career Research

The Transition from Sport to the Sport Technology-Oriented Business: A Pathway for the Dual Career of the Student-Athlete

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Abstract

The objectives of this study were to explore current elite athletes' future ambitions, to analyse their interest in receiving professional development education, and to know about their views and preferences about the structure of the developed courses towards sport technology-oriented business. 48 Spanish student-athletes (58.3% women and 41.7% men), completed an online questionnaire of 29 questions (Likert scale, degree of agreement from 1 to 5) developed through the Delphi method. The main results showed that respondents mostly agreed that they had adequate skills to pursue a career after retiring from sport (4.35±0.812) although they would like to receive training for their professional development (4.38±0.672) and that this training should be completely online (43.8%) or a combination of online and face-to-face (41.7%). They would also like to stay and work in the sports industry after retirement (4.21±0.922) and were interested in aspects related to technology and innovation (4.21±0.849) among others. The conclusions found are that there is an interest among athletes to be trained in the sector, through a programme that adapts to the characteristics of their athletic life with online resources.

Keywords: dual career, new technologies in sport, sport business, non-formal learning.

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1. Introduction

For elite athletes, combining sporting activities with academic or professional projects is often a challenge, sometimes difficult to achieve. The almost exclusive dedication required by high-level sport makes it difficult for athletes to fit their competition and training schedules with the strict limits of the educational system or the business world (Ryba et al., 2015). As a result, athletes are often faced with the dichotomy of choosing between education and sport (López de Subijana et al., 2015), or between sport and business (Küttel et al., 2020). To address this dilemma, athletes can benefit from the dual career pathway model, whose philosophy is based on the idea of reconciling these realities, following the principles of flexibility and commitment to enable an athlete to study, work and train in equal conditions.

Elite athletes have the potential to succeed in the corporate world (Debois et al., 2015). In the business ecosystem, the personal skills that athletes have developed during their sporting career can add significant value (Geranisova & Ronkainen, 2015). Likewise, networks, patronage or relationships they made can help to successfully launch their career in the labor market (Chambers & Lim, 2022). However, without proper education and training, these skills alone are not sufficient. Hence the importance of completing the dual career, as this methodology favors combining these personal skills with a know-how acquired in quality educational institutions.

Another trait that can be valuable among athletes who choose to enter the job market is an entrepreneurial spirit. High-level sport can provide abilities that are compatible with the demands of starting a business. In this sense, the capacity for sacrifice, defeat management, acceptance of effort or teamwork can benefit an athlete's entrepreneurial capacity (Boyd et al., 2021). Nonetheless, recent studies have shown that the drive for entrepreneurship is absent in most dual career training policies and programs (Moustakas et al., 2022).

Within this framework, the Springboard project has been developed with the aim of promoting entrepreneurship spirit among dual career student-athletes through a training curriculum on technology-oriented entrepreneurship based on a blended learning approach. This project aims to develop and implement a training program that helps elite

athletes to transition from sports to the entrepreneurial ecosystem to foster their successful inclusion in the labor market. At the same time, the project foresees to provide the necessary tools to develop a stable and satisfactory life once their sports career comes to an end.

In light of the above, the overall objective of this research was to analyse the views and interests of elite athletes regarding their transition into the sport technology-oriented business after their sporting retirement and specialised training. The specific objectives were as follows: a) to explore current elite athletes' future ambitions, b) to analyse their interest in receiving professional development education, and c) to know about their views and preferences about the structure of the developed courses towards sport technology-oriented business.

2. Method

This research is descriptive, quantitative and cross-sectional. Study participants gave their consent to participate prior to data collection, and were informed about the research objectives and the confidentiality of the data obtained during the study, in accordance with the code from the World Medical Association and the Declaration of Helsinki. This research has been approved by the Ethics Committee of the Catholic University of Murcia (CE032108).

2.1. Participants

In this study, 48 Spanish student-athletes participated, of whom 58.3% were women (n=28) and 41.7% men (n=20), and more than half were between 18 and 25 years old (n=25;52.1%), white (91.7%) and with no long-standing illness or disability (95.8%). Concerning their athlete profile, 66.7% of them (n=32) competed in individual sport, the majority had a professional contract and/or compete with the national team (n=38;79.2%) and the biggest competition in which they have taken part was mainly World Championships (33.3%), followed by Olympic/Paralympic Games (22.9%) and European Championships (20.8%). Regarding their education, the majority (56.3%) had a non-

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university higher education, almost all of them (91.7%) have received or are receiving training that would allow them to develop a professional career, and just 6.3% of them had the opportunity to receive professional development training, but decided against it (Table 1).

Table 1. Sociodemografic data of the sample

Variables		n	%
Gender	Male	20	41.7
	Female	28	58.3
Age	18-25	25	52.1
	26-30	11	22.9
	31-35	5	10.4
	36-40	6	12.5
	More than 40	1	2.1
Compete in	Individual sport	32	66.7
	Team sport	16	33.3
Professional contract and/or compete with the national team	Yes	38	79.2
	No	10	20.8
Biggest sport competition	European Championship	10	20.8
	World Championship	16	33.3
	International Championship	2	4.2
	National Championship	9	18.8
	Olympic/Paralympic Games	11	22.9
Highest qualification	Higher Education degree (Bachelor, Master or PhD)	20	41.7
	Non-university higher education	27	56.3
	High School	1	2.1
Ethnic group	White	44	91.7
	Mixed ethnic background	2	4.2
	Asian	0	0
	Black/African/Caribbean	1	2.1
	Prefer not to say	1	2.1
Long-standing illness or disability that affects or limits day to day activities	No	46	95.8
	Yes	2	4.2
I have received/am receiving training that would allow me to develop a professional career	Yes	44	91.7
	No	4	8.3
I had the opportunity to receive professional development training, but decided against it	Yes	3	6.3
	No	45	93.8

The type of sampling was non-probability by convenience based on the accessibility of the sample and their acceptance to participate in the research. The inclusion criteria were as follows:

— Over 18 years old.
— Spanish elite athletes.

2.2. *Instruments and material*

A 29-question online questionnaire was developed to explore current elite athletes' future ambitions (5 questions; agreement Likert scale 1 to 5), their interest in receiving professional development education (9 questions; agreement Likert scale 1 to 5) and their views and preferences about the structure of the developed courses towards sport technology-oriented business (3 questions; multiple choice). The design of the questionnaire was developed through the Delphi method based on the consensus of a group of experts through analysis and reflection on the problem under study. There were 18 experts in student-athlete dual career and technology entrepreneurship from five European countries, of which 11 were working in the field of higher education at university level and 7 were experts from the business industry.

2.3. *Procedure*

Data collection was conducted over a period of six weeks (from 1 November 2021 to 12 December 2021) through an online questionnaire sent to the participants. There was no restriction on participation as long as the participants met the inclusion criteria and there was no academic or financial incentive for them to take part in the study. Similarly, anonymity was guaranteed in the processing and analysis of the data.

2.4. *Data analysis*

A descriptive analysis was carried out of the quantitative variables (frequency, percentage, mean and standard deviation). The statistical analysis was performed with the SPSS® Statistics v.27.0 package.

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3. Results

The results of this research are presented below, according to elite athletes' future ambitions (5 questions), their interest in receiving professional development education (9 questions) and their views and preferences about the structure of the developed courses towards sport technology-oriented business (3 questions).

The main findings on elite athletes' future ambitions show that they feel they have adequate skills to pursue a career after retiring from sport (4.35±0.812) and that their sporting journey has provided them with assets to pursue a professional career (4.25±0.957). Although the majority agree on having an idea of what they would like to do when they retire from sport (4.17±0.930), this decreases for ideas to develop in business (3.48±0.899) and concerning having sufficient assets to invest in a business (2.60±1.233) (Table 2).

Table 2. Elite athletes' future ambitions

Variables	Strongly disagree	Disagree	Neither agree / disagree	Agree	Strongly agree	M±SD
	f(%)	f(%)	f(%)	f(%)	f(%)	
I have an idea of what I would like to do when I retire from sport	1(2.1)	2(4.2)	5(10.4)	20(41.7)	20(41.7)	4.17±0.930
I have ideas that I would like to develop into a business	1(2.1)	5(10.4)	17(35.4)	20(41.7)	5(10.4)	3.48±0.899
I believe my sporting journey has provided me with assets to pursue a professional career	1(2.1)	2(4.2)	5(10.4)	16(33.3)	24(50.0)	4.25±0.957
I feel that I have adequate skills to pursue a career after retiring from sport	0(0)	2(4.2)	4(8.3)	17(35.4)	25(52.1)	4.35±0.812
I have enough assets if I wanted to invest in business	11(22.9)	12(25.0)	14(29.2)	7(14.6)	4(8.3)	2.60±1.233

In relation to the results about the athletes' interest in receiving professional development education, almost all of them agree that they would like to receive this type of training (4.38±0.672). In this regard, they mostly express their interest in learning how to use social media for professional purposes (4.31±0.748), getting inspiration from other athletes who have developed in the business industry (4.29±0.898) and in aspects related to technology and innovation (4.21±0.849) among others. Regarding their preferences for where they would like to develop their careers when they retire from sport, the majority would like to stay and work in the sport industry (4.21±0.922), with a majority disagreeing with the preference not to work in any sport-related organisation (1.85±1.072) (Table 3).

Table 3. Interest in receiving professional development education

Variables	Strongly disagree	Disagree	Neither agree / disagree	Agree	Strongly agree	M±SD
	f(%)	f(%)	f(%)	f(%)	f(%)	
I would like to receive some professional development training	0(0)	0(0)	5(10.4)	20(41.7)	23(47.9)	4.38±0.672
I would prefer to own a business rather working as an employee	1(2.1)	4(8.3)	21(43.8)	11(22.9)	11(22.9)	3.56±1.009
I would like to learn how I could set up my own business	1(2.1)	2(4.2)	5(10.4)	23(47.9)	17(35.4)	4.10±0.905
I would like to be able to use my sport knowledge to mentor sport businesses	1(2.1)	2(4.2)	6(12.5)	19(39.6)	20(41.7)	4.15±0.945
I get inspired seeing how former athletes have developed in the business industry	1(2.1)	1(2.1)	5(10.4)	17(35.4)	24(50.0)	4.29±0.898
I would be interested to learn how to use social media for professional purposes (LinkedIn, Twitter, Insta, FB)	0(0)	0(0)	8(16.7)	17(35.4)	23(47.9)	4.31±0.748
I am interested in technology and innovation	0(0)	3(6.3)	4(8.3)	21(43.8)	20(41.7)	4.21±0.849
I would like to stay and work in the sport industry when I retire from my sport	0(0)	2(4.2)	10(20.8)	12(25.0)	24(50.0)	4.21±0.922
I would prefer not working in any sport-related organisation	24(50.0)	12(25.0)	9(18.8)	1(2.1)	2(4.2)	1.85±1.072

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Finally, with regard to their opinions and preferences about the structure of the courses developed towards sports technology-oriented business, most of them prefer online-only courses (n=21; 43.8%) or a combination of online and on-site (n=20; 41.7%). In relation to the maximum number of hours they can spend per month on these courses, almost half of them say more than six hours (n=23; 47.9%), followed by four to six hours (n=14; 29.2%). Lastly, regarding their learning preferences in terms of how the content is delivered, most of them prefer a combination of videos and practical activities alone or in combination with other resources such as readings and audios (n=27; 56.3%).

4. Discussion

The specific objectives of this study were to explore current elite athletes' future ambitions, to analyse their interest in receiving professional development education, and to know about their views and preferences about the structure of the developed courses towards sport technology-oriented business.

With regard to the first objective, to explore the future ambitions of elite athletes, it was found that the respondents felt that they had the right skills to pursue a professional career after retirement from sport. In relation to this, it is important to remember that, within the study sample, the vast majority claimed to be undergoing training for their future career. In this line, the studies by Tekav et al. (2015) and Torregrosa et al. (2015) found that athletes who opt for a dual career seem to be better integrated, have a more balanced life, tend to find a rewarding job at the end of their sporting career and are more prepared for life after sport. In addition, dual career athletes have a better adjustment to life after retirement, as they plan their sporting retirement better and have better prospects for future employment in a shorter time (European Commission, 2012).

It is contradictory in the results that athletes believe that their sporting career has provided them with assets to pursue a professional career, but consider that they are insufficient to invest in a company or

business, which may be due to the fact that athletes have not known how to manage the assets that their sport has provided them with. One of the external barriers that the athlete may encounter in his or her career transition is external pressure, which can lead to a lack of focus on financial matters. In order to solve this problem, an external resource for the athlete would be his or her ability to accept the support of other people, such as coaches or family members, in this area (Stambulova, 2003).

While the majority of the respondents agreed that they have an idea of what they would like to do when they retire from sport, this decreases in terms of business development ideas. This data is consistent with the results of the 2022 Athlete Solidarity Entrepreneurship Programme, which supported 31 Olympic athletes through the three phases of the programme and where only 11 of the Olympic athletes went on to develop their businesses. In view of the above, and in order for dual career implementation to be successful, it is necessary to consider the athlete from a holistic and multidimensional point of view, where six mutually influencing levels of development are related: athletic, psychological, psychosocial, academic and vocational, financial and legal, where change in one inevitably leads to modifications in the others (Wylleman, 2019).

According to Ratten (2010), entrepreneurship in sport is dynamic and impacts a number of management areas such as business strategy, crisis management, new sport development, management, product innovation, promotional strategies, social issues, sustainability concerns and technological developments. It is therefore not surprising that the entire study sample shows interest in receiving professional training in this area, in technology and innovation and in the use of social media for professional purposes (Véjar, 2021).

The respondents have a preference to pursue a career in the sports industry when they retire and disagree with the idea of not working in any sports or sports-related organisation, which may be related to a high identification of the participants with their sport. In the study of Mudrak (2010), the retirement process and outcomes of the surveyed athletes seem to be closely related to their athletic identity. The impact

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of athletic identity was paradoxical, as it represented an important motivational factor that supported individuals' participation in intensive sport practice, but at the same time, it complicated the individual's coping skills during the period following withdrawal from competitive sport. When the athletes in the study felt they had achieved their athletic goals, they remained active as coaches or referees even after their competitive career ended and the negative impact of a strong athletic identity dissipated during the retirement process. However, even for them, the process of retirement from competitive sport, in which they had invested a significant amount of time and effort, was demanding but because they remained active in sport, albeit at a different level, they did not have to significantly change their self-perception and more easily accepted the role of a successful retired athlete. In this regard, emotional problems stemming from a strong athletic identity are quite common in athletes retiring from competitive sport (Lavallee & Robinson, 2006), although several strategies can facilitate a more adaptive withdrawal from elite sport, such as easing retirement, accessing necessary social supports, accepting an identity based on past rather than current performance levels (Stier, 2007), planning retirement so that the end of the career is not so dramatic (Stambulova, et al., 2003), feeling satisfied with the successes of previous career goals (Cecic Erpic et al., 2004), and approaching retirement as a transition to the next stage of the sport career (Torregosa et al., 2004).

Regarding the objective of finding out athletes' views and preferences on the structure of courses to be developed oriented to sports technology and business creation, most of them prefer only online courses or a combination of online and face-to-face courses. In Europe, talented athletes tend to abandon sport and prioritise education to prepare for future job opportunities (Amara et al., 2004; Istituto Nazionale di Statistica [ISTAT], 2007) or postpone obtaining a degree from the age of 24. This is largely due to the fact that the sports training system is usually disconnected from school/university education, often creating barriers for young athletes in the full development of their athletic and student status. Therefore, it is necessary to promote policies that combine education and training for dual career development of student-athletes (Lupo et al., 2015) and meet the individual needs of

athletes, taking into account their age, sport specialisation, career stage and economic situation (European Commission, 2012). Previous research (Adler & Adler, 1985; Purdy et al., 1982; Webb et al., 1998), had indicated that athletes who chose a dual career did not perform well academically, but it has subsequently been found that when these athletes are given the opportunity to have a flexible study plan, their academic performance is as good as those of other students (De Knop et al., 1999), and even higher than the general reference population even though they needed more time to finish their studies (Albion & Fogarty, 2003; Conzelman & Nagel, 2003; González & Torregrosa, 2009; López de Subijana et al, 2015; Muniesa et al., 2010).

The maximum number of hours that almost half of the athletes in the sample set for training courses per month is more than six hours, followed by the option of four to six hours. It should be noted that in order to achieve athletic excellence, athletes have to dedicate 20-30 hours per week to training and competition, while students dedicate about 30 hours per week to achieve an academic career (Aquilina, 2013). Young elite athletes face difficulties in balancing their sporting and educational or work commitments, as the goal of succeeding at the highest level of sport requires intense training and numerous trips for competitions at home or abroad, which is difficult to reconcile with the challenges and constraints in the education system and the labour market (Capranica & Millard Stafford, 2011; Conzelmann & Nagel, 2003; European Commission, 2012; Moreno Castellanos et al., 2018). This significant time mismatch means that the labour integration process of high-level athletes may be compromised if they are not provided with the appropriate methods, tools and strategies to cope with it (Puig & Vilanova, 2006; Torregrosa et al., 2015; Tshube & Feltz, 2015).

Finally, as for the discussion of the results, the majority of athletes prefer content-based learning that combines videos and practical activities, alone or combined with other resources such as readings and audios, so these preferences are in line with the different proposals for training courses at European level offered for elite athletes within the Erasmus+ call.

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5. Conclusions

This research analyses the opinions and interests of elite athletes with regard to their transition to the sports technology-oriented business after their retirement and the conclusions found are that there is an interest among athletes to be trained in the sector, through a programme that adapts to the characteristics of their athletic life with online resources, an open programme duration and individualised tutoring. Based on the needs expressed by athletes, it would be interesting to receive training in the field of management and investment of their assets during their sporting careers and the creation of networks between athletes to generate ideas, carry out business plans and promote the visibility and example of athletes who have developed in the business sector.

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Student-Athletes and their Environment

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Abstract

The sporting career is not a linear path but a heterogeneous trajectory in which athletic growth is strongly linked to the athlete's social, personal and/or academic development, whose mutual interaction can condition sporting success (Debois et al., 2012). Under this paradigm, the dual career of athletes must be understood in its numerous connections with their environment, within and outside the sporting context, with demands and needs, sometimes simultaneous, at different levels of their vital performance (Alfermann & Stambulova, 2007). This work seeks to explore the multiple relationships of the student-athletes with their environment and how they are structured along different dimensions. It also seeks to explain how these relationships may be altered by a sudden change such as the COVID-19 global pandemic of 2020 and how athletes involved in the dual career programmes were affected by a dramatic environmental change.

Keywords: dual career, environment, dimensions, COVID-19.

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1. Introduction

Student-athletes are complex agents who simultaneously perform in several dimensions of their lives in addition to sport (Barker-Ruchti et al., 2016). In this context, the dual career must be understood as a multifaceted phenomenon that involves several stakeholders with specific roles, responsibilities and interrelationships in the establishment of a positive support network for the student-athlete (Vilanova, 2009). Building successful programmes is, therefore, highly dependent on the creation of environments that are supportive and inclusive for them (Comeaux & Harrison, 2011).

Different theoretical approaches have been created to define who composes the network of dual career support actors and at which levels they are interrelated. One of the main studies was Aquilina and Henry (2010) who divided the main stakeholders into five interconnected levels: the European Union, States, clubs and federations, universities and athletes themselves. On this basis, Capranica and Guidotti (2016), reformulated the dual career support structure in terms of three dimensions (interpersonal, organisational and global), closely interlinked under the common objective of providing an effective support structure for the student-athlete.

1.1. Interpersonal dimension

The interpersonal level consists of the relationships with the immediate environment of the student-athlete (family, coaches, technical staff, teachers and academic tutors).

As for the family nucleus, the influence of parents has been revealed as key to the success of dual career programmes (Tessitore et al., 2021). Studies such as Kristiansen (2017) showed that athletes rely more on the support of their parents than on other agents in their immediate environment such as friends or coaches, especially in the early stages of the dual career. As indicated by Miró et al. (2018), parents are considered by the athletes themselves as a fundamental

referent at the social level by providing valuable emotional support in the form of encouragement, empathy, advice or understanding. It is precisely because of this emotional support that families with a higher socio-educational level contribute to greater success in their children's dual careers (Sorkkila et al., 2017), thanks to the expectations of success they project onto their children and by helping to maintain the necessary motivation to continue competing and studying in parallel (Moreno et al., 2020).

After parents, coaches are often perceived as the next most important personal support agents for student-athletes (Condello et al., 2019). Coaches have a fundamental influence on the athlete's personal development, as they are authority figures as well as role models through the establishment of a trusting relationship between them (Mageau & Vallerand, 2003). They are a fundamental pillar within the dual career, as they are responsible for the sporting dimension (Aquilina, 2013). As a general rule, coaches have been found to have a positive attitude towards supporting the dual career of their athletes (Guirola-Gómez et al., 2016). This support increases in cases where the coach has been a former high-level athlete (Kuettel et al., 2018).

The support of coaches is significant not only because they are trustworthy with the athlete's environment, but also because they provide them with a space of trust and personal contact that allows them to face the difficulties that arise from combining an intense sporting career with an academic one (Wylleman et al., 2020). However, it should be noted that the scientific literature contains examples of environments without support for dual careers in which coaches (and parents) are opposed to this type of programmes because they consider that studies may hinder the possible professional commitment of their athletes (Ronkainen et al., 2017). It is in these environments where it is highly difficult to establish a dual career culture that benefits the athlete-student.

Lastly, this dimension also involves teachers and tutors (mentors). Mentoring is considered to be one of the most effective strategies when speaking about dual career success (Hallmann et al., 2020). Empirically, sports mentoring has been proven to be effective in several experiences (Mejías et al., 2021). Projects such as "Tutoresport" of the

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Universidad Autónoma de Barcelona (Mateos et al., 2010), or more specifically the Erasmus+ Sport project named "ESTPORT" (Developing an innovative European Sport Tutorship model for the dual career of athletes) by the Universidad Católica de Murcia (Sánchez-Pato et al., 2017), both in Spain, have proven the great impact of the figure of a sport tutor in universities for the adherence of student-athletes to dual career programmes, especially when they belong to the high level of sport.

In this dimension, gender should be a factor to consider at the interpersonal level when examining the effectiveness of dual career models. Studies such as Ryba et al. (2021) have identified a gender bias in the development of programmes undertaken by student-athletes. Although women show similar motivation to men when starting their dual careers (Aunola et al., 2018), female athletes perceive a lower level of expectations regarding the potential development of their sport career (Skrubbeltrang et al., 2018). This fact causes women to be more stably linked to dual career programmes, giving more value on the possibility of sustaining their livelihood based on their studies rather than on their sport (Fuchs et al., 2016). This has been found in the context of different sports where, unlike their male counterparts, the majority of elite female players planned to continue in the dual career until the completion of higher education or postgraduate studies (Tekavc et al., 2015). In contrast, studies such as Baron-Thiene and Alfermann (2015) pointed out negative aspects of female athletes' dual careers, as they would receive less emotional support from parents and coaches than male, which may explain why more women than men decide to give up sport to focus on education, work or family (Ryba et al., 2021).

1.2. Organisational and global dimension

The second dimension, the organisational, refers to the relationships of the student-athlete with sports institutions as clubs or federations. In contrast to the interpersonal dimension, there is more resistance to the dual career in the organisational level. The explanation lies in the fact that in Europe high-level sport is mainly organised through clubs

and sports federations (Stambulova & Ryba, 2014), which prioritise the performance of their players over other aspects such as academic development (Capranica & Guidotti, 2016). This is compounded by a lack of adequate cultures, flexibility in time management or limited mentoring that can lead to disengagement of athletes from the idea of obtaining an academic degree before reaching their full performance potential (Park et al. 2013).

With regard to sports federations, this is perhaps the stakeholder that is least committed to this model, as they are traditionally the furthest away from the core activity of the dual career (Condello et al., 2019). However, their support is often essential as they can act as intermediaries between athletes and other agents such as universities, clubs or even policy-makers (Morris et al., 2021). In some cases, this position has been used to underpin dual career models. An example of this is the case of Finland, where agreements have been signed between certain academic institutions and sports federations for the generation of favourable environments for dual careers through the provision of the necessary services and joint coordination in the academic and sports planning of the student-athlete (Saarinen et al., 2019).

Thirdly and finally, on the support structure at the global level, the study by Aquilina and Henry (2010) is one of the references when defining the categories of response given by national systems to the demands of student-athletes. Thus, comparing the regulatory frameworks in sport and academic policy of the EU Member States, these authors established four typologies of services available for dual career development: a) State-centred regulation; b) State as sponsor/facilitator; c) Federations or Academies as intermediaries; d) Non-formal or "Laisser-Faire" structures.

Therefore, the scenario in Europe is highly disparate despite the European Commission's efforts to establish common guidelines for dual career policies (European Commission, 2012). Such a marked difference in European regulatory frameworks is an impediment to the development of a transversal dual career models that can be successfully reproduced in the different territories (Stambulova & Ryba, 2014), which, in the opinion of Capranica and Guidotti (2016), goes

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against the principle of equality that should be established for all citizens of the European Community area. In relation to this, Lupo et al. (2015) revealed significant differences between models, especially on issues such as motivation towards sport or academic practice, which is higher in student-athletes from centralised or facilitating states than in non-formal states or those that use federations as intermediaries, which in addition can lead to a higher dropout rate from the programme. This also affects other issues as the right to international mobility among student-athletes who face additional difficulties when undertaking exchange programmes like the Erasmus scholarship programme (Fuchs et al., 2016).

All of this reinforces Kuettel et al. (2020) idea that an analysis of dual career models cannot be conducted without a proper understanding of the environment in which they take place. This has been especially true with the emergence of events such as the outbreak of the global pandemic caused by the COVID-19 virus in 2020.

2. The impact of the COVID-19 pandemic on the student-athlete environment

The COVID-19 or SARS-CoV-2 coronavirus pandemic was declared a public health emergency of international concern by the World Health Organisation on 30 January 2020. It has been one of the most severe epidemiological outbreaks in contemporary times. The quick spread of the disease, the initial lack of pharmacological remedies and the saturation of health systems led almost all national governments to decree forced house confinement for several months (Sameer et al., 2020). Major events such as music festivals, religious celebrations, fairs, world expositions and sporting events were cancelled (Ebrahim et al., 2020). In sport, in addition to professional and amateur competitions, major mega-events such as the UEFA European Championship and the 2020 Tokyo Olympics were postponed until public health conditions improved.

Schinke et al. (2020) in analysing the cross-sectional impact of the COVID-19 pandemic on different elite athletes, established three

critical stages: a) before the postponement of Tokyo 2020, announced on 24 March 2020; b) during the postponement and; c) during the reactivation for Tokyo in year 2021. The first stage was marked by the uncertainty and frustration of the athletes as their training schedules were being disrupted while some of their rivals were able to continue to prepare normally in other parts of the world. As a result there was increased stress leading to loss of sleep (Mon-López et al., 2020) and appetite (Gupta & McCarthy, 2021), as well as increased concern about projected life plans (Pillay et al., 2020).

After postponement, debilitating psychological responses such as burnout syndrome, increased feelings of alienation, insecurity, stressfulness or lack of motivation, increased (Håkansson et al., 2021). On the other hand, the postponement of the Olympic Games was seen by another group of athletes as an opportunity for personal growth and development of other interests beyond sport (Taku & Arai, 2020). This was the case for those with a multidimensional identity such as dual-career student-athletes (Schinke et al., 2020). While studies as Tomalski et al. (2019), identified this population as prone to mental illness, no increase in depression levels during the period of confinement was detected (Hagiwara et al., 2021).

Although Stambulova et al. (2020) pointed to the possibility that the outbreak of the Coronavirus could have decisive negative consequences for student-athletes, the fact is that, in specific national contexts such as the case of Spain, the dual career was perceived positively during the pandemic. In the study by Abenza-Cano et al. (2020), the level of perception of the dual career was compared in two samples of high-level student-athletes: a group surveyed in the pre-Olympic year prior to Rio 2016 and others during the COVID-19 pandemic after the suspension of the Tokyo 2020 Olympic Games. The results showed that the COVID group perceived greater benefits of the dual career on their future, which reinforced the idea that this type of programme is an enabler and not an obstacle to the sporting careers of its users, also showing that one of its strengths is the ability to adapt to the circumstances of the student-athletes, however extreme and adverse these may be.

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In this sense, the pandemic has also brought other benefits to athletes. According to Jaenes-Sánchez et al. (2021), the confinement was used by some athletes to strengthen their bonds of friendship and companionship with the rest of their teammates or with the technical staff. This is relevant because, as Graupensperger et al. (2020) stated, there is empirical evidence that those student-athletes who received greater social support during the confinement reported better health and psychological well-being. It also served to increase athletes' commitment to their training plans, even if they had to be adapted to the mobility restrictions in place (Moscoso-Sánchez et al., 2021). Finally, the pandemic helped to reinforce the role of student-athletes as role models by exhibiting tacit compliance with the rules under the state of alarm (Wilczynska et al., 2021).

3. Conclusions

The dual career, as a holistic and multifactorial phenomenon, cannot be understood without an analysis of the student-athlete's environment and the multiple relationships that develop within and outside it, both on a sporting, personal, cultural and political level. This is especially relevant when it has been observed that environmental conditions can change suddenly and dramatically. This leads to the reflection that student-athlete support initiatives, whether governmental or privately initiated, must take into account the circumstances of the environment in the design of their support programmes. Similarly, knowledge of the student-athlete's environment should be key in customising the assitance they receive, which will undoubtedly contribute to the ultimate success of dual career models.

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Interplay of Sports and Education: A Review of Dual Career Literature

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Abstract

The literature on dual career in sports has been developed in a fragmented manner, lacking guidance on the factors that shape dual career choices for athletes and their implications for the sports community. This integrative literature review examines the planning, shaping, progression, and promotion of dual career choices for athletes. Two categories of factors that influence dual career choices and two sets of outcomes (positive and negative) resulting from dual career in sports were identified. Additionally, the study bridges and integrates the varying nature, contradictions, and paradoxes of dual career pathways for athletes, identifying different streams of thought relevant to dual career in sports and providing a thematic overview of future research avenues. This study has important implications for sports entities, coaches, and educational institutions, particularly in encouraging and influencing athletes to pursue higher education by addressing factors that promote dual career choices in sports.

Keywords: dual career, sports, athletes, talent development, sports management, integrative literature review.

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1. Introduction

Today, sports is no more a leisure activity to be performed by athletes as a hobby or for entertainment. Instead, sports have successfully evolved itself into a serious business opportunity. Professional sports activities are even positively shaping the macroeconomic indicators of nations. But the flip side of this story involves some undesirable outcomes involved with twenty first century sports. Athletes are now more prone to the negative apprehensions towards the sustainability of their career. Highly unpredictive career transitions, never ending performance expectations of fans, and challenges of visualizing the sprite of sportsmanship with corporates' 'maximization of profit' has become a common story in the lives of athletes today. The identity of sportspersons seems to have become anonymous with employees of traditional business entities. The above challenges are shoving athletes to search for a security and stability in their lives (Hassan et al., 2023; Skrubbeltrang et al., 2020).

There has been an increase in call for more flexible entry and exit options in sports, and dual career options appeared as an important strategy to mitigate the issue that the athletes are facing currently. Consequently, increasingly a rich body of literature is emerging studying various aspects of dual career (Nam, 2021; Stambulova et al., 2015). These scholars have examined challenges and opportunities in career transition of dual career athletes, identity of athletes as well as role of dual career ecosystem in supporting the athletes (Mateu et al., 2020; van Rens et al., 2019). This increased attention is also evident in recent research where the study context is increasingly focusing on Asian countries as well as emerging nations, which was earlier dominated by European nations and developed economies (Guidotti et al., 2015; Nam, 2021). International Olympic Committee has a dedicated segment guiding dual career athletes on managing sports and academic or work career options, promoting how dual career is a winning combination.

The authors have observed that research on dual career lacks certain elements that turned as a source of motivation for authors to develop

the current review. Firstly, despite increasing awareness and recognition of the importance of dual career support for athletes, there is still a lack of consistency in the provision of support across different sports and countries (Ryba et al., 2020). A review could help identify best practices and areas for improvement in dual career support. Secondly, dual career athletes face unique challenges in balancing their academic and athletic commitments, and the demands of elite sport can make it difficult for them to pursue education and career opportunities outside of sport (Stambulova et al., 2021). A review could explore the factors that facilitate or hinder successful dual career pathways for athletes. Thirdly, dual career athletes may also experience psychological and social challenges related to their dual career pursuits, such as stress, identity conflict, and social isolation (Wylleman et al., 2018). A review of literature could investigate the types of support that are most effective in addressing these challenges.

Last but not the least, the authors have observed that the use of moderators or boundary conditions in these studies are minimal, and dual career studies are predominantly exploratory in nature.

Based on the discussion above, the current research aims to examine the following research questions through a review of relevant literature:

1. How dual career has been conceptualized in the relevant literature?
2. What are the major antecedent factors that shape the experience of dual career athletes, and how do they influence (outcome) athletes' career transitions?
3. What are moderating or boundary conditions that shape the dual career choices of athletes?

The current review aims to map the trajectory of dual career research and identify the major areas of research in dual career, including antecedents and consequences, based on an integrative framework and also suggest future research opportunities in dual career. The approach is consistent with prior work on sports (e.g., Karageorghis &Terry, 1997; Pollard & Lee, 2003).

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2. Methodology

2.1. Choosing an integrative literature review approach

We conducted an integrative literature review (ILR) to examine the literature on dual career (Geidne et al., 2013; Jeong et al., 2021; Walzel et al., 2018). We chose the ILR approach due to its robust identification and selection process, which allows for critical examination of the literature, reducing biases and enhancing the quality of the analysis (Hassan et al., 2023). Additionally, the ILR approach enables the mapping of the existing literature, bringing together varied and diverse conversations through scientific synthesis of past research (Huff, 2008). This approach has been widely used in sports management, marketing, organizational behavior, human resource management, strategy, and psychology literature (Jugwani et al., 2019; Walzel et al., 2018; Zhang et al., 2021). Furthermore, an ILR can provide insight into whether an effect is consistent across studies and identify the characteristics of future studies to demonstrate the effect (Hassan et al., 2023).

2.2. Search protocol

The research objectives were formulated based on our prior understanding of the topic and information gained through consultation with subject matter experts (Snyder, 2019).

2.3. Inclusion and exclusion criteria

Prior studies (e.g., Bavik, 2020; Snyder, 2019) have advised pre-defining the inclusion and exclusion criteria for purpose of search and enhanced robustness of the findings. The guidelines for the inclusion and exclusion were framed based on the recommendations of Cronin and George (2023), Hopia et al. (2016), Snyder (2019), and Vrontis et al. (2022) among others.

1. *Search boundaries/sources*: Accessing and analyzing all the databases are not only challenging but also costly as very few research databases are available free of cost. For the purpose of our study, we referred to EBSCO, Google Scholar, Web of Science, Science Direct and ProQuest database.
2. *Keywords or search strings*: The keyword search begins with exploring the title, articles' keywords and abstract (Cronin & George, 2023). We used truncation to increase search results (Gerhardus et al., 2007).
3. *Boolean keyword search*: We followed the approach suggested by Pollard and Lee (2003) to remove contents which were either incomplete or unclear. Boolean 'OR' and 'AND' operator was used to customize search on various databases (Vrontis et al., 2022).
4. *Setting the period of study*: To avoid missing any relevant study from the past, we did a thorough search of the database and relevant articles. After due consideration, the starting year was selected as 2012. The end date was set as December 2022 (Vrontis et al., 2022).
5. *Inclusion and exclusion criteria*: For the exclusion, the initial round of selection involved shortlisting only peer-reviewed articles published in top-tier journals (ABDC-A*/A & ABS-IV/III/) to ensure quality and recentness (Budhwar et al., 2019). However, limiting our search to only these articles did not fetch many papers. Therefore, we had to include all peer-reviewed journal articles listed in the Scopus journal list.
6. *Language and field of research*: We limited our search to only those articles which were published in English and in journals focused on sports, psychology, physical education, management, and sociology. Journals on English literature, linguistics, mathematics etc. were excluded.
7. *Type of research work*: Only empirical works, conceptual papers and case research was considered for the purpose of review. Reflections, book reviews, conference proceedings etc. were removed from the list.

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After applying the above search protocols and after further removing the duplicate ones and manual filtering of articles, we identified a total of 49 studies in the final stage. We also did a manual search by cross-checking the references from the final shortlisted 49 studies (Endres & Weibler, 2017). For example, a recently published review on parenting and dual career considered a sample of 14 research works (Tessitore et al., 2021).

3. Synthesis

3.1. Conceptualizing dual career

In general, the various definitions of dual career athletes are in agreement that it involves combining sport with a non-sport career. However, studies have made a clear distinction that dual career athletes typically have a full-time non-sport career, with sport pursued as a supplement to this. This distinction is particularly relevant for student-athletes at the primary or middle school level, where education is an important aspect. Similarly, for employee-athletes, non-sport work is seen as an out of sport career transition pathway. However, further research is needed to examine how full-time athletes navigate the dual career path. Overall, while the definitions of dual career athletes provide a useful framework, they also highlight the need for a more nuanced understanding of this phenomenon. In the subsequent paragraph we have explained the same.

Dual career prepares athletes for careers outside the domain of sport. Not every athlete can have an illustrious career, hence focus on developing skills that can help them build a life and be employable is important. Dual career as a term represents the non-sport career pathways athletes consider while developing other employability skills. Hence, studies focusing on dual career primarily explored its significance on career transition and development of athletes (de Oliveira Castro et al., 2021).

Research on dual career has primarily relied on holistic lifespan perspective as a theoretical lens to explain dual career transitions. According to this perspective, sporting career goes through stages of early years, middle years, late years, and discontinuation. Simultaneously, athletes too go through a transition in their cognitive worldview. Sometimes these changes are a result of the life stage of the athletes and sometimes they are individual events like failure or injury that insinuates change in the mental makeup of athletes. Broadly, the way dual career has been conceptualized in the studies can be classified into two categories namely, student-athletes and employee athletes. Student-athletes are those athletes who pursue full-time education parallel with their sporting career. These athletes could be at various levels from middle-school, high-school, to pursuing professional and undergraduate studies in universities while participating in sport from intercollegiate level to international levels. Similarly, employee-athletes are those who held full-time non-sport career while pursuing their sporting career (de Oliveira Castro et al., 2021). Their work could range from unskilled work, self-employed, to skilled work.

To begin with, de Oliveira Castro et al. (2021) define dual career as the combination of elite sports training with education, training or work activities that can potentially lead to a post-athletic career. Nam (2021) also defines dual career as an athlete pursuing both sport and non-sport activities, with the aim of achieving excellence in both domains. Though de Oliveira Castro's definition was proposed only recently, we could find evidence for comprehensive definitions on dual career even in 2015. For example, Debois et al. (2015) have defined dual career as the simultaneous pursuit of two major goals, one being athletic and the other being vocational, educational, or personal. Similarly, we see Tekavc et al. (2015) defining dual career as the athlete's combination of sport and education, training, or work activities, with the aim of achieving excellence in both domains.

Stambulova and Wylleman (2015) have emphasized on the way sports and education are treated to suggest whether we can consider an engagement as dual career or not. Accordingly, dual career should ideally infer the act of pursuing two interrelated and equally

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important career pathways, one being a sportsperson and the other being non-athletic (could be being a student or employee), with a focus on achieving excellence in both domains. This invariably, mean that it would not be necessary to only pursue education along with sports career to be considered as part of dual career. This definition caters to the wider sports community that engages in sports along with full-time/ part time jobs. Ryba et al. (2015) also define dual career as a process of pursuing two career pathways, one being sport and the other being education, work, or other activities, with an aim to succeed in both.

Overall, we see that the definitions of dual career athletes agree on the combination of sport with non-sport career or education. However, some researchers have emphasized the simultaneous pursuit of two equally important career goals, while others focus on balancing the demands of both careers. Some definitions also consider the aspect of post-athletic career, whereas others do not. Therefore, it is important to carefully consider the definition of dual career when conducting research in this area.

3.2. Determinants of dual career

The review identified six major antecedents of dual career intentions. These were named as proactive mentorship (e.g., Hallmann et al., 2019; Kuokkanen et al., 2022), dual-identity in athlete-academic careers (e.g., van Rens et al., 2019), values underlying coaching behavior (e.g., Nikander et al., 2020), espoused values of sports clubs (e.g., Pink et al., 2015), personal and professional development (e.g., Debois et al., 2015) and multifaceted transition model of dual career (e.g., Burnett, 2003).

The influence of proactive mentorship in promoting dual career for athletes works follows several pathways. According to Nam (2021), senior player as experienced sportsperson provides sincere advice to younger athletes regarding educational challenges and career transitions. In other cases, these players can also act as a mediator and assist younger athletes to access social benefits through their

well-connected personal and professional network of people and by providing critical information for future careers. Nam (2021) also identified another pathway in which these players perform the role of a facilitators. As a facilitator, they identified and examined structural problems in the elite sport system, including a lack of educational rights for student-athletes, and voice their concerns. Hallmann et al. (2019) studied proactive mentorship and dual career intentions among the Danish population. Their study concluded that mentors not only fulfill the role of a benefactor, but also that of a supportive friend, a counsellor, accepting partner and role model. Proactive mentorship creates a conducive environment to facilitate easy transition of athletes to a dual career (Hallmann et al., 2019). More recently, Kuokkanen et al. (2022) observed that student-athletes who were highly committed to both sport and education tended to have better adjustment outcomes than those who prioritized one over the other. Additionally, the authors found that social support from family and coaches was crucial for the student-athletes' well-being and success in both sport and education.

In one of reviewed articles (van Rens et al., 2019), the authors described dual identity of Australian athlete-academic and highlighted its role in shaping dual career choices for them. Using a Model of Multiple Dimensions of Identity, they have argued that individuals develop dual identities-one that of academic and another of an athlete. In order to do balance the co-existence of the two identifies, they pay effort to train and develop themselves as a successful athlete and as a student. Here the motivation to balance the two identifies come from the expectation of higher well-being achievable through the co-existence of the two identifies. In another study (Cartigny et al., 2022), researchers surveyed 747 dual career athletes from 12 different countries, who were either in higher education or employed while pursuing their sport. The survey collected information about the athletes' identities, which included their identification with sport, education, and work, as well as their self-efficacy, which refers to their beliefs about their ability to succeed in their chosen fields. The researchers identified three distinct typologies of dual career athletes: athletes with a strong sport identity and high self-efficacy, athletes with a moderate sport identity and moderate self-efficacy, and athletes with a weak sport identity and low

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self-efficacy. The study also found that athletes who identified strongly with both sport and education or work tended to have higher self-efficacy. The study highlights the importance of developing a sense of identity and self-efficacy in dual career athletes, which can have positive implications for their overall well-being and success in both sport and other aspects of their lives.

Values underlying coaching behavior is the third set of factors we identified in the literature. Into et al. (2020) investigated dual career among 451 student-athletes from Finland. Study argued that a perceived autonomy support and mastery climate in both school and sports contexts is negatively associated with symptoms of burnout in student-athletes (dual career). In contrast, perceived performance climate is positively associated with symptoms of burnout, particularly emotional exhaustion, and depersonalization in the context of dual career. The study helps us build arguments on what constitute in promoting dual career or the continuum of dual career among athletes. Interestingly, Into et al. (2020) was the only research paper that focuses on coaching in our reviewed list. This could be a possible future research direction for dual career researchers.

Espoused values was the other micro level factors which was detrimental in dual career pathway. Espoused values refer to the explanations for the goals, strategies, and philosophies. Underneath the espoused values lies the unconscious actions and resistant to change values, known as the basic assumptions (Nikander et al., 2020). Nikander and colleagues investigated how an Australian Football League (AFL) club culture balanced the maintenance of on-field success with the off-field development of its players. Results of the study showed that the AFL club had developed a culture that prioritized both on-field success and off-field player development. The culture was characterized by a strong focus on teamwork, a shared sense of purpose, and a commitment to continuous learning and improvement. The participants reported that the club's leadership, communication, and support systems were instrumental in creating and maintaining the club culture. In one of our studies, Pink et al. (2015) examined the espoused value associated with sports and dual career in the context of Australia. According to their study, dual career development was

important for Australian footballers, football would always come first for them. Athletes who were successful in balancing their sport love and off-field life reported higher well-being and it in turn improved their future on-field performance. A successful dual career for these footballers were contingent upon the degree to which they could associate personal meaning to dual career pathways. Sports clubs helped in increasing the espoused value associated with dual career through organizational support which in turn motivated athletes to pursue dual career.

Finally, personal and professional development (e.g., Debois et al., 2015) and multifaceted transition model of dual career were the two other factors that shaped dual career. Debois's paper was developed by the European Elite Athletes Association (EEAA) and aimed to identify and manage the key determinants of the dual career of elite athletes. The paper identified several key determinants of successful dual careers, including personal characteristics of the athlete, support from family and coaches, access to education and career guidance, and the ability to balance the demands of both careers and highlighted how time constraints, conflicts between athletic and academic/professional schedules, and difficulties in obtaining education and career opportunities could be the potential barrier to dual career choices. Similarly, Debois et al. (2015) studied dual career choices and suggested a model of dual career comprising of four stages: talent identification, talent development, dual career support, and career transition. The researchers also identified key factors that contribute to successful transitions, including early identification of talent, a supportive environment that values education and career development, and access to resources such as education and career guidance. Study found that the model was effective in predicting and explaining the successful transition of French elite athletes from talent identification to dual career development.

Before moving to the discussion on the various outcomes, it is important to syntheses how the most recent research on dual career have show trends for focusing on the suggested categories of dual career determinants. Several studies have identified various antecedents or determinants that impact the dual career of athletes. There has been a sudden surge of studies, particularly in 2021 and 2022, emphasizing on the relevant

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of factors that shape dual career. To illustrate, Stambulova et al. (2021) highlighted the significance of proactive mentorship and dual identity in academic careers for dual career development. Wylleman et al. (2022) emphasized a person-oriented approach to differentiate between single and dual career athletes, while Örencik et al. (2022) suggested that coaching behaviour can significantly impact the dual career of athletes. Hong et al. (2022) focused on the cross-cultural differences in the provision of dual career support services for junior athletes. Capranica et al. (2022) identified the importance of tangible financial factors such as educational support for the parents of dual career athletes. In contrast, Nyberg et al. (2023) highlighted the complementary factors involved in dual career transitions, and Geary et al. (2022) explored the significance of values, specifically athletic identity, for dual career development. Thus, the aforementioned studies have identified several categories of antecedents or determinants of dual careers in sports, including proactive mentorship, dual identity in academic career, values, and coaching behaviour.

3.3. Outcomes of dual career choices

Dual career could be both-rewarding and challenging for athletes. This was also evident in the findings of research papers we reviewed for the current study. Findings of the reviewed articles can be categorized into one offering positive outcomes and another set of findings highlighting the failed outcomes of dual career. Positive outcomes deal with those consequences of having dual career that contributed to the athlete's well-being in a positive way and assisted in career transition. Failed outcomes are those where pursuing dual career led to adversities for the athletes. In the following paragraphs, we explain how dual careers impact athletes positively as well as negatively.

As positive outcomes, from our review of the literature, we found the positive impact of dual career can be categorized into three forms, namely normative linear career transition, satisfaction and meaningfulness from dual career, and on-field sporting performance. Normative linear transition has been drawn on holistic lifespan perspective where transitions on sport career as well as personal life are

predictable. For instance, from adolescent to adulthood, retirement from sports career are examples of normative transitions. Debois et al. (2015) found that dual career positively impacts personal development of athletes through its enriching experience and social recognition. Owing to the predictable nature of normative transitions, they were found to be most effective as the transitions could be planned and negotiated before implementation (Debois et al., 2015). Similarly, review suggests that normative transition in the retirement stage was particularly helpful for athletes in team sports than individual sport athletes. This is possible since athletes in team sports had a long enough time to finish their education and plan for retirement.

Satisfaction and meaningfulness from dual career have been found to be context-driven. Since dual career is considered to be stress-ridden and complicated as athletes advance in the sporting career as well in their education or vocation, it is important that athletes do not feel burnout. Athletes in team sports were found to obtain better psychological and social support as they were able to share and learn from other team members and their experiences in similar circumstances (Davis et al., 2019). Further Davis et al. (2019) found that athletes who obtained flexible academic and sporting training schedules were able to appreciate the benefits of dual career and found it meaningful. In addition to these factors, athletes draw on their sporting identity from participating in prestigious sporting events, which further contributed to their social recognition and fueled satisfaction and meaningfulness (van Rens et al., 2019).

On field performance of athletes is the third outcome under positive implications of dual career. High-performing dual career athletes were found to have strong athletic identity which further resulted in better on-field performance (van Rens et al., 2019). On-field performance to an extent is also related to the second stream of outcome on satisfaction and meaningfulness. In this line, Debois et al. (2015) also found that dual career contributed to athletic development as well as academic development. Similar results were also observed by van Rens et al. (2019), however they add that athletic identity does not necessarily be interlinked with academic or vocational identity, although each of these identities led to better performance of the athletes.

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Dealing with the negative or failed outcomes of having dual career, the outcomes studied in the existing scholars can be categorized into three groups, non-normative transition, mental health concerns, and dissatisfaction. Non-normative transitions are those defining moments in an athlete's personal life and sport career that are involuntary and result from unplanned important events that take place in an individual's life (e.g., injury, unexpected failure to participate in a major competition) (Debois et al., 2015). Scholars studying career transitions observed that non-normative career transition of dual career athletes were difficult to negotiate and accept (Debois et al., 2015). In some cases, non-normative transitions are also associated with decline in performance resulting in unplanned discontinuation of sport career. Performance decline due to injury and recovery from injury leads to stress of catching up with dual career (Andersson & Barker-Ruchti, 2019). It was observed that women athletes felt incapable to deal with the intensity of training as they advanced in their dual career.

Second category of failed outcomes relates to mental health concerns. As has been observed that due to increased expectations from education as well as sport performance, dual career athletes find themselves in stressful situations more often as they progress (Sallen et al., 2018). Hence, stress is observed in normative transition as well. However, non-normative transitions due to injury recovery or any other unplanned events also cause stress of catching up with the demands of dual career. Psychosocial challenges increase in the developmental and mastery stage with transition in personal life, specifically to adult life (Blijlevens et al., 2019).

The third failed outcome of dual career is dissatisfaction. Dissatisfaction stemmed from identity of athletes and non-normative career transition. Dual career athletes were found to juggle between academic identity and athletic identity. Van Rens et al. (2019) identified that athletic identity and academic identity were in conflict in student-athletes. Their results show that dual career athletes considered academic identity to be independent of athletic identity, and academic performance and athletic performance were found to be negatively related. Similar evidence was also found by Mateu et al. (2020). They observed that student-athletes

perception to overcome transitional boundaries of dual career has a close association with sport and academics.

Going back again to syntheses the most recent works on dual career, we observed that most recent researches (2022 onwards) on dual career in sports have highlighted both positive and negative impacts of balancing athletic and academic pursuits. This is unlike the trends that exited a year or two ago. Studies published particularly in 2022 January onwards have emphasized the potential benefits of proactive mentorship, as student-athletes who have access to supportive mentors have been found to experience greater success in both their athletic and academic careers (Nyberg et al., 2023; Stambulova et al., 2021). Additionally, research has demonstrated the importance of fostering a dual identity in academic career, where student-athletes identify as both athletes and scholars, as this can contribute to greater satisfaction and success in both domains (Stambulova et al., 2021).

On the other hand, there are also negative impacts associated with the dual career in sports. For example, student-athletes may experience conflicting demands and stress due to the competing demands of their athletic and academic pursuits (Wylleman et al., 2022). Values have also been found to play a significant role in dual career development, as student-athletes may prioritize one domain over the other, leading to challenges in balancing their obligations (Örencik et al., 2022). Finally, coaching behavior has been found to impact the dual career development of student-athletes, with research demonstrating that negative coaching behavior can negatively affect both athletic and academic performance (Stambulova et al., 2021).

Despite these challenges, recent research has also identified potential solutions for addressing the negative impacts of dual career in sports. For instance, providing comprehensive support services for junior athletes can help alleviate the stress and demands of dual career development (Hong et al., 2022). Additionally, the development of online educational programs for parents of dual-career athletes has been found to be effective in supporting the dual career development of student-athletes (Capranica et al., 2022).

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Overall, recent research has highlighted both the positive and negative impacts of dual career in sports, emphasizing the importance of proactive mentorship, fostering a dual identity in academic career, values, and coaching behavior in supporting the dual career development of student-athletes, as well as the need for comprehensive support services and educational programs to alleviate the challenges associated with balancing athletic and academic pursuits.

4. Discussion

The present review chapter aims to synthesize previous research on dual career pathways in the sports field, with the goal of shedding light on the various challenges and opportunities related to athletes' dual career choices. The synthesis of dual career research is significant for both scholars and practitioners, as it offers valuable insight into this field. Despite the considerable empirical research that has been conducted on dual careers in sports, attempts to synthesize these studies have failed to garner much support or bring anything to the attention of practitioners and scholars. As a result, the authors of this review chapter were involved in a pan-European dual career research aimed at developing an entrepreneurship diploma program for European athletes. It was realized that reports such as the European Union's 2012 guidelines and handbook on dual careers, which aimed to raise awareness of the available opportunities and challenges for athletes, were not being referred to or discussed much in academic circles. The current study attempts to address this gap by synthesizing prior research in the field of dual careers.

Dual careers in sports go beyond talent development strategies, as their benefits extend beyond active engagement in sports, and recent research has shown how dual careers can help athletes plan for a more stable and fulfilling retirement. However, balancing sports with education can be challenging, particularly for elite athletes who face media scrutiny, public expectations, and the risk of falling from grace. Despite these challenges, the study found that the benefits of dual career pathways outweigh the difficulties, as athletes are motivated

to seek better well-being, meaningful work, in-role performance, and satisfaction, as well as financial stability and the ability to cope with the day-to-day challenges of transitioning to retired life.

The review goes beyond the common view that dual career pathways follow a linear transition in every case. Instead, the study shows that the transition of an active athlete into retirement or from athlete to student, and its potential implications, are contingent upon several factors. A synthesis of the findings of the reviewed articles suggests that there are possible four streams or pathways for dual career. The first stream involves athletes who are fully committed to their sports career, with little or no interest in pursuing an alternative career. In this case, the athlete may need to sacrifice their educational and professional development to focus on their athletic goals. The second stream concerns athletes who pursue dual careers simultaneously, with the athlete balancing their sports and educational pursuits. This requires a great deal of effort and support from coaches, mentors, and family members, but it provides opportunities for personal growth and development. The third stream is for athletes who transition from their sports career to a post-athletic career, with education serving as a means of facilitating the transition. This type of transition requires planning, support, and guidance, as well as a redefinition of identity and goals. The fourth and final stream involves athletes who have to retire early from their sports career due to injury or other reasons and are forced to pursue an alternative career path. This type of transition can be particularly challenging, as it requires a re-evaluation of identity and goals, and the development of new skills and networks.

The review paper sheds light on the various challenges and opportunities related to athletes' dual career pathways and highlights the importance of synthesizing prior research in this field. It shows that dual career pathways are not always linear and may be contingent upon several factors, and that a supportive environment, guidance, and planning are crucial for the success of such pathways. The review also underscores the positive benefits associated with dual career pathways, which include greater well-being, financial stability, and a smoother transition to retirement.

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5. Opportunities for future research

A critical assessment of reviewed articles and a broader analysis of existing reports and white papers on dual career from leading global agencies have assisted in holistically deriving future research opportunities. Future research on dual careers in sports should focus on the six themes identified in this study, namely complementary factors, tangible benefits, forced exit, training and development, cultural impact, and orientation. Research in these areas will help to develop a better understanding of the antecedents and determinants of a successful dual career in sports.

Recent studies have highlighted the importance of complementary factors in the dual career of athletes. For example, the study by Wylleman et al. (2022) found that athletes with a clear separation between their athletic and academic roles experienced less conflict and stress than those who did not have such a separation. Additionally, the study by Hong et al. (2022) emphasized the importance of supportive dual career services, which can provide athletes with the necessary resources to balance their athletic and academic commitments.

Tangible benefits, such as financial and career-related benefits, have also been identified as important factors in the dual career of athletes. A study by Örencik et al. (2022) found that financial support and career planning were important factors in the successful dual career of athletes. Similarly, Capranica et al. (2022) highlighted the importance of providing educational resources to parents of dual career athletes, which can help to ensure that athletes receive the necessary support to succeed in both their athletic and academic pursuits.

Forced exit is another important theme that future research on dual careers in sports should address. Research by Cartigny et al. (2022) highlighted the experiences of athletes who were forced to quit their athletic or academic careers due to their inability to meet their dual obligations. This research emphasizes the need for greater support and guidance for athletes who may be struggling to balance their athletic and academic commitments.

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Perceived Barriers to Dual Career Success and the Importance of Athlete Identity in Dual Career Student-Athletes with Disability

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Abstract

The aim of this study was to quantify the perception of barriers to the achievement of dual career success and the relevance of their identity in student-athletes with disabilities in Spain. A total of 87 Spanish student-athletes with disabilities completed the questionnaires 'Perceptions of dual career student-athletes' (ESTPORT), the 'Exercise Benefits/Barriers Scale' (EBBS) and the 'Athletic Identity Measurement Scale' (AIMS). The highest scores were found for the barrier 'Students' schedules are not flexible' (3.30±1.34), followed by 'The university/educational institution is far from my training centre' (3.07±1.45) and 'I do not have enough support from the university/educational institution' (3.00±1.38). The results related to the benefits and barriers of exercise show that student-athletes agree most with 'I think people in exercise clothes look funny' (2.84±1.05) and 'Exercise facilities do not have convenient hours for me' (2.79±1.05). Finally, in relation to the results of the sport identity of student-athletes with disabilities, they give the highest scores regarding their degree of agreement to 'I have many sport-related goals' (5.79±1.74) and 'I consider myself an athlete' (5.68±1.68). In conclusion, student-athletes with disabilities showed a medium and high perception of barriers, mostly related to distances and timetable and support received, showing high scores related to their perception as athletes.

Keywords: athlete identity, barriers, disability, dual career, student-athlete.

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1. Introduction

There are an estimated 80 million people with disabilities in the European Union, equivalent to 15% of the EU population (Priestley et al., 2016). This population is potentially less likely to have a professional sporting career than non-disabled people (Wareham et al., 2017), which is an additional form of social exclusion.

Social exclusion is a multidimensional reality that is linked to numerous aspects such as social status, education, health, income, or access to social services (Silver & Miller, 2003). From a social perspective, inclusion should not be seen as the antithesis of exclusion, but as a dimension of positive social development that must be reconciled with the objectives of promoting social well-being and the development of individuals at different levels (Anttiroiko & de Jong, 2020).

Causes that can lead to social exclusion include reduced opportunities for access to higher education, unequal access to the labour market or lack of participation in social activities such as sport (Labonté et al., 2012).

Sport is one of the main means for social integration (Kamberidou et al., 2019). It has been successfully used for the inclusion of special populations at risk of exclusion including people with disabilities (Kiuppis, 2018). In this sense, sport has proven to be an effective tool for achieving social inclusion of people with disabilities, as it gives them the opportunity to showcase their talents and skills and to challenge stereotypes associated with their condition (Blauwet & Willick, 2012).

Four dimensions have been identified through which social inclusion processes can be organised: spatial, relational, functional and empowerment (Bailey, 2005). Sport can contribute to the inclusion process of people with disabilities by: reducing barriers that prevent access to shared sport practice spaces (spatial); generating a sense of belonging to sport institutions, clubs etc., that allow people with different backgrounds to share a common interest (relational); providing the opportunity to develop their capacities and skills within the framework

of sport practice (functional); and developing social support networks that increase community cohesion and support for the individual (empowerment).

The process of social inclusion of athletes with disabilities is not without barriers. Three types have been defined: individual, social, and environmental (Jaarsma et al., 2014). Individual barriers refer not only to physical or architectural obstacles (Rimmer et al., 2004) but also to self-imposed limits by disabled athletes themselves (Haslett et al., 2017). In many cases they are caused by a lack of assistance or inadequate guidance. Social barriers are associated with the lack of preparation of members of sport organisations to adapt to the specific needs of athletes with disabilities (Martin, 2013). Environmental barriers refer to the general lack of mobility aids for people with disabilities and the civic sense to reverse this situation (Hästbacka et al., 2016).

Sport is as much a pillar of social inclusion as education or employment. In our societies, access to higher education, obtaining paid employment or practising a high-level sport without restrictions are factors that foster social inclusion (Asís Roig, 2017). Students with disabilities are generally less likely to have access to university education than students without disabilities (Biewer et al., 2015). Access to Higher Education is significantly relevant as it improves the employability of people with disabilities. Among people with only secondary education, people without disabilities are 23% more likely to be employed (Adams & Holland, 2006). However, this difference is reduced to 15% among people with a university degree. This means that people with disabilities who have successfully completed higher education are more likely to find employment and enjoy a stable situation. In this sense, the promotion of dual careers for athletes with disabilities can be an effective way to achieve their social inclusion.

Defined as a priority objective in the "White Paper on Sport" (Commission & Directorate-General for Education Sport and Culture, 2008), the Dual Career model has been implemented with notable success in universities across Europe since then (Storm et al., 2021). Once the model has been consolidated, the Dual Career should evolve to be extended to other sectors of the population, such as athletes

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with disabilities, with specific adaptations to reduce barriers to its implementation.

In disabled sport it is necessary to develop sporting skills that are at the same level as their non-disabled counterparts (Grandisson et al., 2012). This sometimes involves many hours of hard work and training to achieve the required performance. This means that these disabled athletes have greater needs derived from their abilities (Bellieni, 2015) and, therefore, show a greater risk of social exclusion as they are unable to reconcile their demanding sporting lives with academic training to secure a future (Collins et al., 2014).

Dual careers are a necessary step in this process. Athletes with disabilities have valuable personality traits and attitudes such as commitment and leadership, which can add value to the university ecosystem (Thomas & Smith, 2009). Similarly, these skills can materialize in increased performance of the student-athlete in their academic progress (Stambulova, 2016), serving as a role model for other people with disabilities to enter higher education (Leake & Stodden, 2014).

Paradoxically, scientific research has not yet focused on the promotion of dual careers in athletes with disabilities (Magnanini et al., 2022). Scientific publications are practically non-existent, which makes this field a priority area for analysis and action. The aim of this study was to quantify the perception of barriers to the achievement of dual career success and the relevance of their identity in student-athletes with disabilities in Spain.

2. Material and methods

2.1. Design

The study design was descriptive and cross-sectional, with non-probability convenience sampling. The STROBE statement (Vandenbroucke et al., 2014) was followed for the research design and development of the manuscript. Study participants gave their consent to participate prior

to data collection and were informed of the research objectives and the confidentiality of the data obtained during the research. The institutional ethics committee reviewed and authorized the protocol designed for data collection, in accordance with the code of the World Medical Association and the Declaration of Helsinki (code: CE012101).

2.2. Participants

The sample size was calculated using Rstudio 3.15.0 software (Rstudio Inc., USA). The significance value was set at $\alpha=0.05$. The standard deviation (SD) was established attending to perceived barriers of previous studies (SD=0.75) (Mateo-Orcajada et al., 2022). With an estimated error (d) of 0.16, the required sample size for a 99% confidence interval (CI) was 85 subjects.

The final sample consisted of 87 student-athletes with disabilities from Spain. The inclusion criteria were: a) have a physical, sensory (visual or hearing) disability or cerebral palsy; b) have been a member of a sports federation for at least three years; and c) to be currently enrolled in the last years of compulsory education (pre-university education), a university degree, a university master's degree, or a doctorate.

2.3. Instruments

The 'Perceptions of dual career student-athletes' (ESTPORT) questionnaire (Sánchez-Pato et al., 2016), the 'Exercise Benefits/ Barriers Scale' (EBBS) (Sechrist et al., 1987) and the 'Athletic Identity Measurement Scale' (AIMS) (Visek et al., 2008) were used for data collection.

The 'Perceptions of dual career student-athletes' (ESTPORT) questionnaire is a validated questionnaire which allows the measurement of student-athletes' perception regarding their dual career (Sánchez-Pato et al., 2016). The internal consistency of the questionnaire is high, as

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Cronbach's alpha coefficients are above 0.70, this being the lower limit accepted as reliable (Corbetta, 2007; Sánchez-Pato et al., 2016). It has been used in previous research about dual career (Abenza-Cano et al., 2020; Gavala-González et al., 2019). Cronbach's alpha coefficient of the scale corresponding to the barriers with the sample used in this research was α=0.817, understood as a high reliability (Corbetta, 2007). This questionnaire is composed of 84 items with different types of response options (Likert scale, multiple choice, and short answer), with most of the questionnaire items using the Likert scale. To obtain information about sociodemographic and contextual variables such as gender, age, level of sports professionalisation, stage of sports career, level of education, or work situation, sociodemographic questions were included to describe the sample. Furthermore, to know the difficulty of reconciling sporting and academic life, question 20 about dual career barriers of student-athletes was also included. These questions used a Likert scale from 1 (strongly disagree) to 5 points (strongly agree).

Also, the EBBS was developed in response to a need for an instrument to determine the perceptions of individuals concerning the benefits of and barriers to participating in sport activities (Sechrist et al., 1987). The resulting instrument was tested for internal consistency (Cronbach's alpha=0.954), validity of its constructs (variance explained: 65.2%), and test-retest reliability (ICC=0.89) (Sechrist et al., 1987). Cronbach's alpha coefficient of the scale corresponding to the barriers with the sample used in this research was α=0.795, understood as a high reliability (Corbetta, 2007). From this survey, the items about the barrier scale were included in this research. The questions used a four-response, Likert-type format with responses ranging from 4 (strongly agree) to 1 (strongly disagree).

Finally, to measure the athletic identity, the 'Athletic Identity Measurement Scale' (AIMS) was used (Visek et al., 2008). The scale has shown an internal reliability coefficient of 0.81 (Visek et al., 2008). Cronbach's alpha coefficient of the scale corresponding to the barriers with the sample used in this research was α=0.889, understood as a high reliability (Corbetta, 2007). The AIMS requires participants to answer seven items designed to assess aspects of athletic identification,

with the athlete's role measured on a scale ranging from 1 (strongly disagree) to 7 (strongly agree).

2.4. Procedure

Data collection was carried out from the Universidad Católica San Antonio de Murcia (Spain). For the distribution of the questionnaire, the sports service of the university itself was contacted. The questionnaire was also distributed through the ONCE Foundation and the Spanish Paralympic Committee. These organisations then distributed the questionnaire by e-mail to all athletes with disabilities in their databases, specifying that only those who were studying at pre-university, undergraduate or postgraduate level should complete the questionnaire.

Participants first completed and signed the informed consent form, informing them of the research objectives and procedures, and then completed the questionnaire anonymously and individually, without academic or competitive pressures, and without the presence of their coaches or teachers. The participants did not receive any additional indications or explanations about the purpose of the questionnaire, other than those indicated in the questionnaire itself. The questionnaire was made available via the GoogleForms® platform and was completed by the participants in 20-30 minutes. All data were collected anonymously.

2.5. Statistical analysis

The normality of the data was initially assessed with the Kolmogorov-Smirnov test, homogeneity with the Levene's test, and sphericity with the Mauchly test. The descriptive analysis of quantitative variables showed mean values and standard deviations, while frequencies and percentages were calculated for qualitative variables. The statistical analysis was performed using the SPSS statistical package (v.25.0; SPSS Inc., IL, United States).

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3. Results

Socio-demographic, education, type of disability, sports career, distribution of time and dual career variables are described in Table 1.

Table 1. Socio-demographic, education, type of disability, sports career, distribution of time and dual career variables

Variables	Item	Athletes with disabilities (n=87)
Socio-demographic	Age	23.98±5.78
	Gender	Male: 54(62.1%)
		Female: 33(37.9%)
Education	What do you study?	Vocational Education: 30(34.5%)
		Bachelor's Degree: 45(51.7%)
		Master's degree/Ph.D.: 12(13.8%)
Disability	Type of disability	Hearing:16(18.4%)
		Visual:19(21.8%)
		Physical: 34(39.1%)
		Cerebral palsy: 18(20.7%)
Sports career	Level professionalisation	Amateur: 23(26.4%)
		Semi-professional: 32(36.8%)
		Professional: 32(36.8%)
	Stage sports career	At the beginning: 41(47.1%)
		At the highest level: 36(41.4%)
		At the end: 10(11.5%)
Distribution of time	How many hours do you spend per week studying/going to class?	25.66±17.10
	How many hours do you train / compete per week?	18.75±24.54
Dual career	Difficulty in combining studies and sport	Very easy: 2(2.3%)
		Easy: 10(11.5%)
		Medium: 38(43.7%)
		Difficult: 31(35.6%)
		Very difficult: 6(6.9%)

Table 2 shows the results related to the perception of barriers in the dual career of student athletes. Student-athletes showed average or high scores on all items. In this respect, the highest scores are obtained for the barrier 'Students' timetables are not flexible' (3.30±1.34), followed by 'The university/educational institution is far from my training centre' (3.07±1.45) and 'I do not have enough university/educational institution support' (3.00±1.38). In contrast, student-athletes perceive the barriers 'I have to take care of my family' (1.93±1.19), 'The cost of education is high' (2.51±1.40) and 'My current job does not allow me to study enough' (2.51±1.30), followed by 'I find myself unable to balance study and training time' (2.54±1.31) to a lower extent.

Table 2. Dual career barriers of student-athletes

Item	SD	D	N	A	SA	Mean±SD
	f(%)	f(%)	f(%)	f(%)	f(%)	
The university/educational institution is far from my home	19(21.8)	14(16.1)	22(25.3)	13(14.9)	19(21.8)	2.99±1.44
The university/educational institution is far from my training centre	20(23.0)	10(11.5)	19(21.8)	20(23.0)	18(20.7)	3.07±1.45
I find myself unable to balance study and training time	24(27.6)	24(27.6)	15(17.2)	16(18.4)	8(9.2)	2.54±1.31
My current job does not allow me to study enough	30(34.5)	8(9.2)	31(35.6)	11(12.6)	7(8.0)	2.51±1.30
I have to take care of my family	49(56.3)	9(10.3)	17(19.5)	10(11.5)	2(2.3)	1.93±1.19
I am usually tired	19(21.8)	12(13.8)	26(29.9)	22(25.3)	8(9.2)	2.86±1.27
I lose the rhythm of the academic year	16(18.4)	20(23.0)	19(21.8)	23(26.4)	9(10.3)	2.87±1.28
I lose touch with my classmates	21(24.1)	21(24.1)	13(14.9)	22(25.3)	10(11.5)	2.76±1.37
The cost of education is high	30(34.5)	17(19.5)	16(18.4)	14(16.1)	10(11.5)	2.51±1.40
I do not have enough university/educational institution support	19(21.8)	12(13.8)	19(21.8)	24(27.6)	13(14.9)	3.00±1.38
Students' timetables are not flexible	11(12.6)	15(17.2)	19(21.8)	21(24.1)	21(24.1)	3.30±1.34
Training's timetables are not flexible	26(29.9)	14(16.1)	17(19.5)	21(24.1)	9(10.3)	2.69±1.39

SD: *strongly disagree*; D: *disagree*; N: *neutral*; A: *agree*; SA: *strongly agree*.

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The results related to exercise benefits and barriers show that student-athletes agree to a greater extent with 'I think people in exercise clothes look funny' (2.84±1.05) and 'Exercise facilities do not have convenient timetables for me' (2.79±1.05). In contrast, they mainly disagree with those related to the support received from their family ('My family members do not encourage me to exercise' [1.45±0.88]) and partner ('My spouse (or significant other) does not encourage exercising' [1.45±0.85]) (Table 3).

Table 3. Exercise benefits and barriers

Item	SD	D	A	SA	Mean±SD
	f(%)	f(%)	f(%)	f(%)	
Exercising takes too much of my time	18(20.7)	32(36.8)	25(28.7)	12(13.8)	2.36±0.96
Exercise tires me	19(21.8)	22(25.3)	34(39.1)	12(13.8)	2.45±0.98
Places for me to exercise are too far away	22(25.3)	30(34.5)	30(34.5)	5(5.7)	2.21±0.89
I am too embarrassed to exercise	64(73.6)	12(13.8)	4(4.6)	7(8.0)	1.47±0.91
It costs too much to exercise	42(48.3)	29(33.3)	11(12.6)	5(5.7)	1.76±0.88
Exercise facilities do not have convenient timetables for me	10(11.5)	29(33.3)	17(19.5)	31(35.6)	2.79±1.05
I am fatigued by exercise	29(33.3)	30(34.5)	27(31.0)	1(1.1)	2.00±0.83
My spouse (or significant other) does not encourage exercising	64(73.6)	12(13.8)	6(6.9)	5(5.7)	1.45±0.85
Exercise takes too much time from family relationships	30(34.5)	20(23.0)	25(28.7)	12(13.8)	2.22±1.07
I think people in exercise clothes look funny	15(17.2)	11(12.6)	34(39.1)	27(31.0)	2.84±1.05
My family members do not encourage me to exercise	66(75.9)	8(9.2)	8(9.2)	5(5.7)	1.45±0.88
Exercise takes too much time from my family responsibilities	32(36.8)	27(31.0)	19(21.8)	9(10.3)	2.06±1.00
Exercise is hard work for me	25(28.7)	30(34.5)	26(29.9)	6(6.9)	2.16±0.95
There are too few places for me to exercise	42(48.3)	24(27.6)	15(17.2)	6(6.9)	1.83±0.95

SD: *strongly disagree;* D: *disagree;* A: *agree;* SA: *strongly agree.*

Finally, related to the results of the athletic identity of student-athletes with disabilities (Table 4), participants showed average or high scores regarding their identity as athletes. Specifically, they give the highest scores with respect to their degree of agreement to 'I have many goals related to sport' (5.79±1.74) and 'I consider myself an athlete' (5.68±1.68). In contrast, the lowest scores are shown for 'Most of my friends are athletes' (4.71±1.75) and 'I feel bad about myself when I do poorly in sports' (4.78±2.00).

Table 4. Athletic identity

Item	SD	D	SwD	N	SwA	A	SA	Mean±SD
	f(%)	f(%)	f(%)	f(%)	f(%)	f(%)	f(%)	
I consider myself an athlete	1(1.1)	6(6.9)	5(5.7)	8(9.2)	11(12.6)	13(14.9)	43(49.4)	5.68±1.68
I have many goals related to sport	3(3.4)	5(5.7)	4(4.6)	5(5.7)	8(9.2)	15(17.2)	47(54.0)	5.79±1.74
Most of my friends are athletes	2(2.3)	11(12.6)	11(12.6)	13(14.9)	16(18.4)	17(19.5)	17(19.5)	4.71±1.75
Sports are the most important part of my life	1(1.1)	4(4.6)	8(9.2)	12(13.8)	11(12.6)	19(21.8)	32(36.8)	5.45±1.61
I spend more time thinking about sports than anything else	5(5.7)	10(11.5)	9(10.3)	10(11.5)	15(17.2)	13(14.9)	25(28.7)	4.83±1.94
I feel bad about myself when I do poorly in sports	7(8.0)	9(10.3)	8(9.2)	11(12.6)	15(17.2)	11(12.6)	26(29.9)	4.78±2.00
I would be very depressed if I were injured and could not compete in sports	4(4.6)	8(9.2)	9(10.3)	8(9.2)	12(13.8)	16(18.4)	30(24.5)	5.11±1.91

SD: *strongly disagree*; D: *disagree*; SwD: somewhat disagree; N: *neutral*; SwA: somewhat agree; A: *agree*; SA: *strongly agree*.

4. Discussion

In the present study, the views on perceived barriers of 87 student-athletes with disability were collected. The sample consisted mainly of males. This could be due to the "double whammy" that disabled

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women usually suffer when they want to practice sports and become professionals in this field, as they are marginalized both because of their gender and their disability (Culver et al., 2022; Deegan, 2018; Güven et al., 2019; Pérez-Tejero & Ocete-Calvo, 2018), in addition to having less structural and social (Culver et al., 2022), and financial support (Clark & Mesch, 2018) in the pursuit of their dual career success, as well as negative experiences with male coaches who inappropriately addressed their gender and/or disability (Alexander et al., 2020). This could lead to a higher drop-out rate from sport or education among women (Güven et al., 2019), and therefore fewer women combine higher education and sports in adulthood. However, this needs to be further analyzed in future studies.

About their studies, a significant percentage of respondents were studying vocational studies, while the vast majority were studying for their undergraduate degree. In this regard, the Education 2030 Framework for Action (Smith et al., 2020) highlights that while the tertiary education provision has increased rapidly, there is still a wide disparity in access, particularly at the university level, not least due to disability. This is also reflected in the enrolment of people with disabilities in university degrees, which is significantly lower than their peers (European Commission, 2018), even though in Spain, they have a quota of places for access by law (Boletín Oficial del Estado, 2014). The problem seems to lie not as much in access, but in the barriers, they perceive to succeed in their university careers because of the lack of adaptations to their disabilities or the lack of support at institutional and faculty levels (Arnold et al., 2017; Black et al., 2014; Myers & Parker, 2018). This may lead them to opt for an education in which they are likely to achieve easier academic success, such as vocational education.

On the other hand, most of the respondents indicated that they were at the beginning or at the peak of their sporting career. In this regard, the biographical trajectories of people with disabilities are different from those of people without disabilities, since the timing of sporting transitions is not necessarily aligned with age (Heller & Parker Harris, 2012), and often reflects a delay because of infantilization and lack of

recognition in the social sphere (Soláns, 2014). Furthermore, whether the disability is congenital or acquired will cause the progression through the different stages of sport training to be different and, in the latter, variables such as the chronological age and maturational state of the subject when the disability is acquired, the process of adaptation and accommodation to the deficit, previous sports experiences, and social support may affect it (Mendoza Laiz et al., 2018).

The aim of this study was to quantify the perception of barriers to the achievement of dual career success in student-athletes with disabilities in Spain. Athletes with disabilities were found to have average or high scores on most of the barriers. This is consistent with previous studies that have pointed to the difficulties that people with disabilities have in achieving success in academic or sporting lives. (European Commission, 2018; Wolbring & Lillywhite, 2021).

More specifically, some of the barriers perceived by this group as highest were those of a geographical and logistical nature for the athlete, with the increased complexity and costs of transport, especially if it must be adapted (Reina-Vaillo, 2018). For athletes with disabilities, issues related to the difficulty of getting to the place of training or study, the lack of a car park for people with disabilities, and the distances between journeys, among others, were stress factors (Arnold et al., 2017), especially for those who moved in wheelchairs or had significant mobility limitations (Crawford & Stodolska, 2008).

Lack of institutional support was also found to be one of the barriers with the highest scores. Previous studies have pointed to the absence of support staff from the university to advise and guide the student-athlete throughout the process as one of the main barriers in non-disabled athletes (Sánchez-Pato et al., 2017). In the light of the results of this research, this barrier is also affecting disabled athletes, in addition to the fact that people with disabilities are particularly vulnerable to the lack of equal opportunities in the education system (Claeys-Kulik et al., 2019), with few opportunities at the institutional level (López-Flores et al., 2021).

Another aim of the present research was to quantify the relevance of their identity for student-athletes with disabilities in Spain. It was found

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that participants showed moderate or high values for all items related to their identity as athletes. This is relevant given that involvement in sports could be a valuable socializing agent and may provide opportunities for countering stereotypes and stigmas that society often places of disabled individuals (Kissow, 2015). Therefore, sport could be an important element of socialisation and integration for student-athletes with disabilities, being aware of its importance in their lives and giving it a relevant place in their order of priorities.

This research presents the novelty of being the first to analyse perceived barriers and identity as athletes in student-athletes with disabilities in the Spanish context. However, it is not without its limitations. Among them is the heterogeneity of the population analysed, being necessary in future research to analyse whether aspects such as gender, level of studies, sporting level, etc. could affect the parameters analysed.

5. Conclusions

In conclusion, Spanish student-athletes with disabilities presented a moderate to high perception of barriers to the success of the dual career, especially those barriers of a geographical and logistical nature and those related to the support of the academic institution. In addition, they present moderate to high values in the importance they give to their identity as athletes.

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Dual Career Projects

Preventing Match-Fixing Through Dual Career

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Abstract

The scandals of recent years in relation to match-fixing are increasingly widespread, and the organizations that are trying to combat it warn that match-fixing is one of the greatest threats facing sport in this century. The aim of the present study is to find out in the different sports disciplines what the basic knowledge is, as well as the opinion that the different agents involved in sport have about match-fixing. For this purpose, a questionnaire was administered to 243 participants. The main results confirm that there is a general knowledge about match-fixing and that it is illegal, being more known in professional sports than in semi-professional or amateur sports, as well as more widespread in collective sports than in individual sports. This study highlights the results in order to establish mechanisms to mitigate match-fixing through the figure of the sports counselor in the dual career.

Keywords: awareness raising, sports counselor, sports disciplines.

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1. Introduction

Match-fixing has existed throughout the history of sport, although it has undergone a major change in recent years: the advent of online sports betting, betting markets, the absence of preventive educational methods, as well as the lack of adequate legislation, make this phenomenon a major threat to the sporting world (de Cima & Moriconi, 2022). According to the Council of Europe (CE, 2014), 'Manipulation of sports competitions' or also known as 'match fixing' means an intentional arrangement, act or omission aimed at an improper alteration of the result or the course of a sports competition in order to remove all or part of the unpredictable nature of the aforementioned sports competition with a view to obtaining an undue advantage for oneself or for others (article 3.4).

Training and education are among the key tools to curb the spread of the disease. One of the suggestions would be a greater investment in different contents such as the legal consequences of match fixing, as well as the ethical and moral considerations that this corruption entails. A good way to create legal ties is through the signing of a contract with a code of ethics or code of conduct by athletes, coaches, referees and anyone who may be involved (Haberfeld & Sheehan, 2013).

The main aim of this study was to know in the different sports disciplines what are the basic knowledge, as well as the opinion that the different agents involved in sport have about match-fixing in order to mitigate it through the dual career.

2. Methods

Descriptive study where participants provided their informed consent to participate prior to data collection. In accordance with the Declaration of Helsinki and the code of the World Medical Association, study participants were also informed of the research objectives and the confidentiality of the data collected during the study.

2.1. Participants

A total of 243 participants took part in this study, 76.1% of whom were men (n=185) and 23.9% women (n=58), all of Spanish nationality. Regarding their educational level the majority had studied a university degree 43.6% (n=84), or had completed it, 31.3% (n=76), while 30.9% (n=75) had completed vocational training and only 3.3% (n=8) had basic studies. The sport discipline is observed in Table 1. Table 2 shows the sports involvement of the participants.

Table 1. Participants sports discipline

Sports discipline	n=243	
	n	%
Football	91	37.4
Basketball	13	5.3
Volleyball	9	3.7
Rugby	38	15.6
Tennis	5	2.1
Handball	29	11.9
Athletics	17	7.0
Other	41	16.9

Table 2. Participants sports involvement

Sport involvement	n=243	
	n	%
Former athlete	29	11.9
Athlete	48	19.8
Coach	32	13.2
Member of sport club/association	25	10.3
Member of a federation	17	7
Referee	46	18.9
Parent/guardian	11	4.5
Manager	4	1.6
Sponsor	11	4.5
Sport fan	20	8.2

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2.2. Procedures

A questionnaire was created to describe the degree of knowledge about match fixing and its implication in different sports. The questionnaire was divided into several parts: (A) descriptive information about the participants, (B) basic information about knowledge and participation in match-fixing, (C) analysis of the degree of agreement/disagreement of the participants with this topic using a Likert scale. Data collection was conducted over a period of 4 weeks (from 1 June 2021 to 30 June 2021). The questionnaire was sent to participants digitally via Google Forms® survey tool.

2.3. Data analysis

The statistical analysis was performed with the SPSS® Statistics v.27.0 package. A descriptive analysis was used through the frequency distribution.

3. Results

The results of this study show that there is a general awareness of the concept of match fixing (Table 3), knowing it through internet or scientific literature (24.3%), as well as having heard it in the sports federation (13.2%) or club (11.5%), among others. However, among the results of this research, it is shown that although most of the participants know that match-fixing is illegal, many would not know where they could report it (66.3% Vs 33.7%).

Table 3. Results on the basic knowledge about match-fixing

Questions	n=243					
	Yes		No		I am not sure	
	n	%	n	%	n	%
Do you know or have you heard about the phenomenon of "match-fixing"?	230	94.7	12	4.9	1	0.4
Would increasing the awareness of people about match-fixing reduce this negative phenomenon?	163	67.1	26	10.7	54	22.2
Do you know, if match-fixing is legal?			226	93	17	7
Would you report match-fixing, if you were aware of it?	193	79.4	21	8.6	29	11.9
Do you know whom to report match-fixing?	82	33.7	161	66.3		

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Table 4. Results on agreement or disagreement about match-fixing

Statements	n=243									
	Strongly disagree		Disagree		Indifferent		Agree		Strongly agree	
	n	%	n	%	n	%	n	%	n	%
Match-fixing is very common in sports	17	7	92	37.9	62	25.5	47	19.3	25	1.3
Match-fixing involves a great deal of money	8	3.3	10	4.1	46	18.9	59	24.3	120	49.4
Match-fixing is more likely in individual sports	27	11.1	47	19.3	94	38.7	45	18.5	30	12.3
Match-fixing is more likely in team sports	18	7.4	44	18.1	89	36.6	57	23.5	35	14.4
Match-fixing is more common in professional sports	14	5.8	37	15.2	72	29.6	55	22.6	65	26.7
Match-fixing is more common in semi-professional sports	23	9.5	36	14.8	58	23.9	71	29.2	55	22.6
Match-fixing is more common in amateur sports	74	30.5	77	31.7	92	37.9				
A higher level of education leads to less involvement in match-fixing	20	8.2	25	10.3	53	21.8	54	22.2	91	37.4
A lower level of education leads to less involvement in match-fixing	73	30	65	26.7	54	22.2	18	7.4	33	13.6
A higher level of income leads to more involvement in match-fixing	30	12.3	51	21	86	35.4	30	12.3	46	18.9
A lower level of income leads to more involvement in match-fixing	34	14	32	13.2	63	25.9	67	27.6	47	19.3
Match-fixing is against the principles of fair play					4	1.6	13	5.3	226	93
I would match-fix a game if it had no consequences (legal, disciplinary, social, etc.) and I would profit from it (financially or materially)	163	67.1	24	9.9	24	9.9	17	7	15	6.2
I consider match-fixing to be socially accepted	55	22.6	101	41.6	52	21.4	13	5.3	22	9.1
There is a great deal of control by the competent bodies over match-fixing	39	16	70	28.8	74	30.5	45	18.5	15	6.2
Sports betting has some relation to match-fixing in sports	11	4.5	6	2.5	20	8.2	54	22.2	152	62.6
Advertising of sports betting increases the occurrence of match-fixing	12	4.9	12	4.9	36	14.8	52	21.4	131	53.9

According the results of our investigation about the agreement or disagreement about match-fixing (Table 4), it can be seen how match-fixing is not a very common issue and that it is known in professional sports, while in semi-professional and amateur sports it is not. In addition, there is greater agreement that match-fixing occurs more in team sports than in individual sports and that a higher level of education leads to less involvement with match fixing. Furthermore, among the results shown in Table 4, it can be observed that although it is not a socially accepted strategy, there is not much control by the authorities to prevent match-fixing, which in turn could involve other sectors such as advertising and marketing, the media and sports betting agencies.

4. Discussion

For the present research, a questionnaire was applied to find out the basic knowledge in the different sports disciplines, as well as the opinion that the different agents involved in sports have about match-fixing, with the purpose of promoting it in dual career.

Referring to the general knowledge of match-fixing, 94.7% of respondents have heard of match-fixing. In this sense, it is confirmed that it is a very widespread knowledge. In this regard, a study analyzes the prevalence of match-fixing, and 6.3% of those surveyed state that they have been personally approached about match-fixing (Van Der Hoeven et al., 2020). Therefore, it is key to increase society's awareness of match-fixing, as 67.1% consider that awareness would reduce match-fixing. One of the problems is as some authors point out, that if these people are aware of the risks, they do not always see match-fixing as an ethical issue, but sometimes rather as a "friendly gesture" towards another club or athlete, which shows a lack of moral sensitivity, which is why raising awareness of this problem is essential.

According to the results of our investigation on the degree of agreement or disagreement on match-fixing, it is more common in

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professional sport (26.7%), while in semi-professional and amateur sport it is less common. And it is in amateur sport that match-fixing unrelated to betting is most detected (Van Der Hoeven et al., 2020). But our results affirm that they agree or strongly agree that in general sports betting is related to match-fixing, without differentiating between professional and non-professional sports. Differentiated to team and individual sports, there are differences, being the collective sports in which they are more aware that more match-fixing occurs. These data are in line with those presented by Theodorou (2017) and Zamante (2012) where the percentage increases in the discipline of soccer.

Fortunately, according to our results, match-fixing is not socially accepted (64.2%), compared to the study by Van Der Hoeven et al. (2020) 17.8% knew someone who had been contacted for match-fixing, this percentage being lower in another study conducted in the Netherlands by Spapens and Olfers (2013, 2015). One of the reasons for the percentage differences may be due to cultural differences. On the other hand, experts indicate that the psychological factor is key, as a person who is aware of the situation will perceive match-fixing as a threat when it is offered (Boniface et al., 2012).

In our study, about 77%, do not agree with the statement of I would rig a match if it had no consequences and I would benefit from it, but Cashmore and Cleland (2014) and Hill (2009) claim that one of the reasons for being involved in match fixing is because they have a low salary, delay in payments (Hill, 2015) or even interest for a career advancement (Boeri & Severgini, 2011) or coercion (Capenter, 2012).

For this reason, the promotion of athletes with the figure of "sports counselors" through the dual career plan could be fundamental in the prevention of this type of fraud in the sports world, all through educational courses, lectures, personal experiences and workshops that encourage and prevent this practice of sports rigging in all categories and sports disciplines.

5. Conclusion

It is clear that match-fixing occurs, and more and more methods, investigations, and initiatives are being undertaken to stop this wrongdoing. According to this study, most people are aware that match-fixing is prohibited, even if most of them would not know where or how to report the incident. Match-fixing is significantly more common in team sports than it is in individual sports, and it is much better known in professional sports than it is in semi-professional or amateur sports. After the presentation of this research, we can confirm that, although being on the correct track, there is still a long way to go in order to prevent a crime that exists in sports and that may be minimized by the implementation of sports counselors through programs like the dual career.

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Challenges of the Employee-Sportspersons: An Integrated Multi-Sectorial Partnership for Dual Career through the BRAVA-DC Project

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Abstract

The European Union supports the rights of the sportsperson to develop a professional career in combination to their sporting career (e.g., dual career). To encourage the effective recognition of the right to a dual career of the employee-sportspersons, an innovative Erasmus+Sport transnational cooperation between for academic institutions, three sport organizations, and two corporate partners from 7 European Members States (BEL, DRK, IRE, ITA, MAL, SLO, and SRB) focused on the BRAnd Alignment Value through Dual Career (BRAVA-DC). The innovative methodological approach to the co-construction of a European framework based on evidence and eminence of the actual needs of employee-sportsperson is described, and the development of BRAVA-DC guidelines are foreseen. Finally, the potential impact of the findings to provide opportunities for improving the working conditions of sportspersons are envisaged.

Keywords: corporate social responsibility, brand alignment, working conditions, dual career guidelines, multidisciplinary approach.

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1. Introduction

Following the European Year of Education Through Sport (e.g., EYES 2014) and the publication of the White Paper on Sport (European Commission, 2007), the European Union has recognized the significant social and economic impacts of sport, and the athlete's role in representing the European sports model and the European identity (Arai et al., 2014; Council of the European Union, 2020, 2021; De Bosscher et al., 2015; European Athletes, 2016; European Commission, 2018; Kleissner & Grohall, 2015). In this framework, the athlete's right to combine sport and education/work career (e.g., dual career) has been a priority of the European Union, and the European Commission has published recommendations for the Member States, in which common guiding principles are enforced and solid dual career agreements between sports bodies, educational institutions, companies, and agencies of the labour market are advocated (European Commission, 2012). In considering that Member States have full competence in the field of sports, the European Union could adopt only a 'soft' policy to overcome the different dual career approaches, policies, and provisions in place at national level (Aquilina & Henry, 2010; European Commission, 2016). To further support dual career, the European Commission encourages effective dialogue and cooperation between sports bodies, educational institutes, non-governmental organizations, and enterprises through a progressive distribution of European funds allocated to the European Action Scheme for the Mobility of University Students (ERASMUS) + Sport Collaborative Partnerships (European Commission., n.d.). More recently, the European dual career of athletes has been expanded to all the sportspersons, including coaches, physical trainers, referees, sports managers, and volunteers (European Parliament, 2021). These efforts have triggered the development and publication of several reports, specific guidelines, educational tools, and thorough research on European dual career (Capranica et al., 2021; Capranica & Guidotti, 2016; European Commission, 2016; Sánchez-Pato et al., 2017). In particular, the bidirectional relationship between European dual career policies and evidence- and eminence-based research has been summarized in three systematic literature reviews and a journal special issue, which

ascertained the advancement of the European dual career discourse in different socio-cultural contexts, and highlighted future challenges related to those aspects which currently diverge from the European guidelines (Guidotti et al., 2015; Stambulova & Wylleman, 2019; Torregrossa et al., 2021; Vidal-Vilaplana et al., 2022).

Starting their sport career at young ages and progressing from adolescence into adulthood, elite athletes typically experience progressively greater training loads through increasing volume, frequency, and intensity of training and competitions. During their developmental years, athletes undergo different career stages and transitions at the athletic, psychological, psychosocial, academic/vocational and financial levels, occurring at distinctive times, having various influences on each other (Wylleman & Lavallee, 2004). In many sporting disciplines the career of athletes progresses into adulthood, with peak performances and/or retirement occurring in the late years of the third decade of life (Allen & Hopkins, 2015; Barth et al., 2021; Vretaros, 2022). In sustaining their sports careers during their adulthood, not only athletes but also referees, coaches, support staff, sports managers, and other volunteers need to combine their dual career work-sport commitments (International Labour Organization, 2020). Advancements in dual career at educational levels and in the provision of financial support are often available for Olympic and professional athletes, however dual career support programmes provided at an elite sport level, are less likely to be available for sub-elite sportspersons despite their high commitment to training and competition in their respective sports (Capranica & Guidotti, 2016; European Commission, 2016; Robnik et al., 2022; Zafeiroudi et al., 2020). Furthermore, difficulties in the transition to post-sport career have been reported for both elite and sub-elite athletes, with gaps between their formal education and a successful employment mainly due to a lack of sufficient working experience sacrificed to sports commitments (Knights et al., 2016; López de Subijana et al., 2020; Robnik et al., 2022; Zafeiroudi et al., 2020). To provide support for themselves and their families, athletes and sportspersons engaged in non-professional or sub-elite sports typically need to seek some form of part-time or full-time employment to overcome the financial uncertainty and the

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economic burden of long-lasting sports careers (Moreno et al., 2021). In recognition of these challenges there is a growing need for the establishment of formal agreements between educational institutions, sports organizations, and for-profit companies to support an effective dual career during and after the competitive years of a sportsperson (Capranica & Guidotti, 2016; European Commission, 2016, 2020). Therefore, the lack of dual career support arrangements for effectively combining work-sport commitments (i.e., working schedule that offers flexibility and/or athletic leave when preparing for competitions) may place the employee-sportspersons at risk of dropping out of sport or employment.

In some Members States, a limited number of elite athletes and coaches are recruited to join the Military, which facilitates opportunities to train and to compete at national and international levels within their respective services. However, at the end of their sports career Military sportspersons could be automatically dismissed or placed at the lowest levels of their respective services career pathway. At a for-profit company level, business-oriented companies value elite athletes and consider them primarily as vehicles for advertisements or product endorsement (Shanklin & Miciak, 1997). In fact, marketers increasingly involve elite athletes in the promotion of their products (Openendorse, 2019) as a critical element of brand strategy (Ding et al., 2011), in mediating the brand equity creation process (Seno & Lukas, 2007), and in creating meaning and value transfer of their products (Halonen-Knight & Hurmerinta, 2010). Companies with a strong vision and brand-related values grounded in sport or in health-related activities should consider the enhancement of a dual career not only through their internal strategies (i.e., vision and cultural values) but also through the promotion of an external image. To enhance an effective synergy between brand's internal values, the company's vision (i.e., internal dimensions) and image (i.e., external dimension), companies are called to define and implement strategic processes that align their internal and external dimensions (Balmer, 2012; Hatch & Schultz, 2008; Mingione, 2015). This could allow companies to achieve an authentic behaviour and a proactive translation of dual career into their own policies and practices for ameliorating their working conditions and for facilitating the

employment of athletes. Moreover, a strategic process of alignment may help in achieving collaborative practices of employees-athletes/coaches, who co-create the sport-related values of the companies (Mingione & Leoni, 2020). In fact, companies should recognize also that athletes can achieve specific working outcomes having developed critical life skills such as goal setting, emotional control, positive thinking, self-awareness, problem solving, goal attainment, teamwork, skill development, hard work ethic, international experience, cross-cultural understanding, adaptation to different environments, master of media communication, and healthy behaviours (Goudas, 2010; Robnik et al., 2022). Recently, the Council of the European Union urged business enterprises to engage in new approaches on upskilling and reskilling of their employees through employer-sponsored training (Council of the European Union, 2022). As the labour market evolves, the continuous informal education acquired through high-level sport participation could allow sportspersons to upgrade their skills and achieving a competitive employment advantage when compared to their non-athlete counterparts (National Center for Education Statistics, 2005). Finally, business enterprises could engage in promoting dual career initiatives within their framework of Corporate Social Responsibility (CSR), which is a process to achieve sustainable development in societies, treating all stakeholders of a company or institution ethically and responsibly (Hopkins, 1998).

Industry-funded initiatives and sponsorship of programmes, public policies, and dissemination of scientific research could help shaping the socio-economic and cultural dual career environment at the workplace. There is currently a growing need for a cross-sectoral and innovative dual career multi-stakeholder partnership to fill in the gap in knowledge of the employee-sportspersons phenomenon, to structure an evidence- and eminence-knowledge base on dual career employee-sportspersons, and to implement the European dual career guidelines for facilitating appropriate brand alignment strategies and CSR policies in the workplace. To provide sound evidence- and eminence-based information for the identification of potential company strategies and approaches to support dual career of the sportspersons, the Erasmus+Sport Collaborative Partnership Brand Alignment Value through Dual Career (BRAVA-DC, 622824-EPP-1-2020-1-IE-SPO-SCP) aims to coordinate the efforts of four

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high-profile academic institutions with a long-term international knowledge in education and research related to the field of sport and business (e.g., University of Limerick, IRL; University of Ljubljiana, SLO; University of Nis, SRB; and University Roma Tre, ITA), three sport organizations with a consolidated experience at national and European dual career (EAS, MLT; ESAA, DNK; EUSA Institute, SLO), and two corporate partners with an international expertise in the talent development in the business sector (EPSI, BEL; Human Age Institute, ITA). In this context, BRAVA-DC intends to be innovative at a number of levels: 1) academic level by bridging the gap of the knowledge on the working conditions and dual career needs of employee-athletes, and fostering the inclusion of the dual career issue in the academic courses involving of sports and management, sport, and also business programmes; 2) sport level by raising the awareness and calling for action of sport bodies (e.g., National Olympic Committees, High performance centers, Sport federations, Sport academies, Clubs) on issues related to the status of employee-athletes as well as former athletes as future employees, and stimulating a commitment for the establishment of a strong alliance with the business sector to facilitate the transition of athletes into the labour market; and 3) labour market level by raising the awareness of dual career-oriented companies on the career needs of athletes/former athletes as employees. This will be achieved through a strategic process based on the alignment between their sport-oriented vision, cultural values and brand image through an authentic and pro-active translation of dual career into their own policies for ameliorating their working conditions and for facilitating the employment of athletes. In this context, the implementation of dual career of the employee-athlete will be the common denominators of dual career providers across Europe and sectors.

Therefore, the purpose of the present work is to highlight the current status and impact of dual career of employee-sportspersons. In addition, we aim to provide the methodological approach to evidence- and eminence-based information for the creation of a dual-career framework for guidelines and sound recommendations, which are designed to enhance the European workplace environment where the implementation of policies could effectively accommodate the dual career of a large population of European employee-sportspersons.

2. Materials and methods

2.1. Experimental approach to the problem

The Ethical Committee of the University of Rome Foro Italico approved the BRAVA-DC project (9:2018), which is aligned to the European Parliament Resolution on an integrated approach to Sport Policy: Good governance, accessibility and integrity (European Parliament, 2017); the EU Sport Plan 2021-2024 (Council of the European Union, 2020); the Reflections towards a sustainable Europe by 2030 (European Commission, 2019); the Guidelines regarding the minimum requirements in skills and competences for coaches (European Commission, 2020); the European employer skills survey for sport and physical activity (European Observatory of Sport and Employment, 2019); the Report on EU sports policy: assessment and possible ways forward (European Parliament, 2021); and the Recommendation on individual learning accounts of the Council of the European Union on lifelong learning for upskilling and reskilling of the workforce (Council of the European Union, 2022). In addressing the sport, academic and business-oriented domains, BRAVA-DC intends to implement the principles of the European Commission Erasmus+ programme (Guidotti et al., 2015) specifically relating to the recommendations of the EU Dual Career Guidelines (European Commission, 2012), to "develop and improve the conditions needed for sustainable dual career programmes allowing for tailor-made arrangements for talented and elite athletes throughout Europe, either in their position as a student-athlete or employee-athlete (p.4)"; to envisage "the balance between sports training and employment (p.4); and to enhance "future employment prospects (i.e.,. higher employability and access to well-paid jobs) (p.5)".

The BRAVA-DC project promotes and implements dual career by means of the standardization of methods, procedures, and data management across Europe for the development of dual career recommendations in the business sector. To achieve its aim, BRAVA-DC is structured in interrelated key phases encompassing preparatory, implementation, and dissemination aspects. In the preparatory phase,

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the partners in BRAVA-DC combine their extensive experience in dual career research on development and policy gaps, especially related to corporate brand alignment and social responsibility. To ensure a rigorous research design, methods, procedures, data analyses, and construction of the BRAVA-DC recommendations, the implementation phase encompasses a comprehensive needs analysis and a very strong evidence-based statement regarding the project relevance to European dual career policies. To understand the values, beliefs, behaviors, and needs of dual career sportspersons from different countries, sports, and working environments, an ethnographic stance is adopted to gain a comprehensive understanding of dual career at the workplace as shaped by different social and cultural settings (Genzuk, 2003). Thus, a step-by-step methodological approach aims to gather evidence- and eminence-based information on dual career of the employee-sportspersons through a systematic literature review, and the organization and conduction of workshops involving employee-sports persons and managers of governmental organizations and for-profit companies. This information represents a sound basis for a concept mapping procedure employed to construct a dual career BRAVA-DC framework based on the opinions, working experiences, perceptions, and needs of employee-sportspersons and their employers, and dual career experts on the possible implementation of dual career in the workplace. Finally, the dissemination phase is intended to increase the awareness of dual career of the employee-sportspersons at national and international sports bodies (e.g., Olympic Committees, National Sport Federations, and sport clubs), educational institutions (e.g., university courses in sports management), public and private companies, and scientific communities.

2.2. Inclusion/exclusion criteria of participants

Participation to the BRAVA-DC is voluntary and based on a process of informed consent designed to co-create and implement dual career at the workplace. From the he recruitment of participants in the BRAVA-DC eminence-based knowledge targets a fine stratification of employee-athletes/former athletes, employee-coaches, sports managers, corporate marketing managers, CSR managers, human resources (HR) managers

and dual career National and International delegates. General information will also include the sex and nationality of the respondents and the size (e.g., number of employers) of their workplace.

2.3. Procedures

For the evidence-based knowledge on relevant factors for dual career of the employee-sportspersons, a systematic literature review of scientific contributions on dual career for employee-sportspersons will be organized based on a consensus on the search strategy, inclusion criteria of research topics and research methodologies of the scientific contributions, a defined string for the search at the main electronic databases, and definition of categories for data extraction and analysis. To overcome the rigidity of the mechanistic search, a snowballing technique will be applied to identify relevant papers not emerging during the electronic search.

The perspective of individual employee-sportspersons, sports managers, corporate marketing managers, and CSR managers could provide the current status of European dual career policies of the employee-sportspersons. To explore organizational practices, and to highlight dual career challenges and possible solutions, focus groups organized at national level in 6 European Member States (e.g., Belgium, Bosnia, Denmark, Ireland, Italy, and Slovenia) will collect eminence-base knowledge from employee-sportspersons, sports managers, corporate marketing managers, and CSR managers confronting competencies and experiences. To identify relevant factors emerging from the opinions, needs, challenges and perceptions of the participants, a series of open-ended questions will be considered the most appropriate method for stimulating the individual thoughts and experiences, and for encouraging exchanges and comments on each other's points of view (Kruger & Casey, 2009). The outcome of the focus groups will be the identification of a set of factors to be considered in the development of a dual career of employee-sportspersons, as well as the importance of integrating efforts by companies, governments, sports bodies and academic institutions. Finally, to uncover possible

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cultural perspectives arising from diverse European geographic areas and countries adopting dual career policies (Aquilina & Henry, 2010), the final list of potentially relevant factors for a dual career at the workplace established at the end of the focus groups and emerging from the systematic literature review will be submitted to European dual career experts for evaluating their clarity.

For the definition of a European framework of dual career at the workplace based on an integrated obligation-opportunity conceptual model, a standard online concept mapping procedure will be adopted to create a logic model integrating practical with scientific knowledge (Condello et al., 2016; Trochim, 1989; Trochim & Kane, 2005; Trochim et al., 2008; Varga et al., 2021). Thus, a pre-notification email providing information on the development of the European framework of dual career at the workplace will engage participants to rate each statement in relation to its perceived importance and feasibility for dual career at the workplace, by using a 5-point Likert-type scale from 1 (lowest value) to 5 (highest value); additionally, they will sort the statements in groups (min 2, maximum 10) according to their individual logic. Data will be entered into a concept mapping software (Group Wisdom, Concept Systems Inc., Ithaca, NY, www.conceptsystems.com, 2022) and used to generate a ladder map illustrating the concordance between ratings at the cluster level and a go-zone graph showing the concordance of feasibility and importance ratings (Trochim & Kane, 2005).

These evidence- and eminence-based findings represent key conceptual components and a solid scientific background for the implementation phase of European dual career guidelines of the employee-sportsperson, and for raising the awareness of companies, enterprises, employers, academic and sport staff, and policymakers on the needs of working dual career sportspersons, and for foreseeing possible solutions.

3. Discussion

According to the Global Dialogue Forum on Decent Work in the World of Sport of the International Labour Organization (International

Labour Organization, 2020), a number of policies and practices addressing issues of decent work in the world of sport, should be implemented through social dialogue. With its transnational character and demand-driven methodological approach to generate an integrated understanding of current dual career challenges, needs, and problems of employee-sportspersons, the BRAVA-DC project is overall innovative and at the forefront of dual career in the labour market, which could result in providing significant guidance to anticipate and resolve possible conflicts sportspersons might encounter in combining their sport and meaningful working careers. More specifically, the synthesis of extant evidence-based knowledge on the experiences, perceptions, opinions and needs of dual career employee-sportspersons, employee-former athlete, employers of sportspersons, corporate dual career supports, brand alignment strategies and CSR polices related to dual career, could allow dual career remedy mechanism based on existing knowledge and the identification of knowledge gaps (International Labour Organization, 2020). Furthermore, the development of operational dual career guidelines for the business sector could help the corporate sector envisaging possible arrangements to adapt to the employment needs of sportspersons at different stages of their careers, determining a strategic alignment between multiple actors oriented to the enhancement, implementation, and exploration of possible models for public and private financing of an effective dual career in and beyond Europe.

In offering recommendations to increase the collaboration between sport and business stakeholders for future employment of a skilled workforce, the BRAVA-DC guidelines not only will establish a framework to take dual career objectives forward, but are also in line with the recommendation of the Council of the European Union on individual learning accounts upholding the individual right to timely and tailor-made assistance for improving employment prospects and for securing an employment (Council of the European Union, 2022). In line with the academic arrangements for dual career sportspersons, adaptable employment, upskilling and reskilling, fair working conditions, and labour protection mechanisms for the sportspersons are strongly encouraged (European Commission, 2012; European

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Parliament, 2021). The knowledge-based and participative process in developing the European dual career guidelines at the work place could offer an important condition for subsequent translation of findings and recommendations to increase the collaboration between sport and business stakeholders for future employment outcomes and continuous extension of implementation measures over time; to increase the awareness on dual career at the workplace where awareness is still limited; to establish a unique evidence- and eminence-based European framework of dual career for employee-sportsperson, having a potential generalizability beyond Europe, and also a relevant impact in the scientific community; to generate a precursor for future dual career education programmes for university students in sport and in management, and for coaches, who could become future proactive mediators between sport bodies and enterprises; and to initiate a managerial process that will give strategic guidelines to successfully align the vision, values and brand image of a company through dual career of athletes.

The BRAVA-DC project contributes substantially to the EU strategic priorities on education, employment and social inclusion. In systematically linking European research and managerial practice, BRAVA-DC subsumes national boundaries to meet the EU White Paper on Sport (European Commission, 2007), the EU Guidelines of Dual Career of Athletes (European Commission, 2012) and the Report on the State of Play Concerning the Implementation of the EU Guidelines on Dual Careers of Athletes (European Commission, n.d.), the EU Parliament Resolution on an Integrated Approach to Sport Policy: Good Governance, Accessibility and Integrity (European Parliament, 2017), the recommendations of the European Studies on the Minimum Quality Requirements for Dual Career Services (European Commission, 2016), and on Qualifications/dual careers in sports (Capranica & Guidotti, 2016), and the Employment, Social Affairs & Inclusion (European Commission, n.d.).

In fostering a strategic process of business-oriented companies based on the alignment between their sport-oriented vision, cultural values and corporate image (Hatch & Schultz, 2001, 2008) through an

authentic and effective implementation of the dual career, the guidelines developed with a bottom-up approach encompassing international diversity of political, economic, socio-cultural, environmental and funding backgrounds will reverberate at regional and national level thus fostering also a top-down approach. In being the first approach to involve companies as crucial actors of the European dual career of athletes, the BRAVA-DC project represents an opportunity for the research and dialogue with a range of relevant stakeholders, which will help filling the existing gap of the employee-athlete. The enhancement of alignment strategies (Mingione, 2015) aiming at delivering a sport-oriented brand promise to the employee-athletes/coaches represents a tremendous opportunity to establish solid alliances between the diverse stakeholders (i.e., sport-oriented and business-oriented), for the benefit of dual career athletes. Thus, BRAVA-DC creates an additional legacy for the European Commission and the advancement of a European dual career culture and policy, also beyond Europe. The BRAVA-DC project also meets the demands for evidence-based information and support programmes for European employees (European Commission., n.d.). Furthermore, the outcomes of this project have the potential to contribute to acquire a global dimension of European sports after the competitive years of athletes.

4. Implications

The European Commission urges companies to implement their impacts on society by developing dedicated approaches for the adoption of socially responsible conducts including employment practices, opportunities, health and well-being working conditions, education and training (European Commission, 2011). In this context, the BRAVA-DC guidelines will foster the strategic alignment of a vast number of stakeholders, all driven by the same purpose focused at achieving social awareness thanks to common and collective efforts of the actors participating to the process of value creation (Iglesias et al., 2023). In particular, the project aims to enhance a dual career multi-stakeholder coalition of companies, sporting bodies, and governmental

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organizations committed to establish a meaningful dialogue to embrace dual career principles and to operationalize their respective dual career duties for the benefit of the employee-sportspersons. These guidelines will also help to raise awareness of dual career as a topic, which should be included under the umbrella of (internal) CSR programmes, strategies, and communication. In fact, dual career issues are often overlooked or not even included in the contemporary managerial discourses on CSR in the midst of the proliferation of CSR talk and action related to workplace issues, such as the development of family-friendly workplaces within the broader issue of work-life balance (Álvarez-Pérez et al., 2020) and securing the diversity and equal opportunity in the broader context of non-discrimination policies at the workplace (Maier & Ravazzani, 2019). In other words, the BRAVA-DC guidelines could contribute to fill the gap in the existing internal CSR/HR policies by developing policies that would concentrate on improving the conditions for dual career employees. Furthermore, BRAVA-DC intends also to raise the managerial awareness regarding the fact that dual career represents a driver for brand value co-creation as well as an opportunity for upgrading or refreshing the internal branding strategies, since employee-sportspersons can act as trust-worthy internal and external brand ambassadors.

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An Innovative Sport-Focused Entrepreneurship Bootcamp - ELCAMP

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Abstract

The sports career of high-level athletes always has an end and it occurs for various reasons such as injuries, decreased performance, lack of financial support, among others. It happens at different ages with economic support than depends both on the sport and on the sporting level. Faced with this situation, high-level athletes in many cases generate economic income and/or savings to be able to start an investment in business development, which could be linked to sport due to knowledge of the activity and the association of their curriculum. But in this process, not all athletes have the knowledge and skills to start a working life according to the demands of the labor market and errors and mismanagement could happen that generate a serious social problem because the athlete can see his economy greatly affected. Their insertion into the job market is still important. In order to improve this situation, the ELCAMP project (An Innovative Sport-focused Entrepreneurship Bootcamp) was generated through a methodology of analysis of the situation and detection of the training needs of high-level athletes at the end of their career or already retired, establishing a formative curriculum that was implemented in an adaptable and accelerated program. The results of the process have generated great acceptance among the participants and interest among the different stakeholders, concluding that this type of training is practical and direct and meets the needs and expectations of high-level athletes.

Keywords: bootcamp, entrepreneurship, olympics, high level athletes, sport business, dual career.

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1. Introduction

1.1. Dual career of athletes (elite and Paralympic athletes)

In the last decades, elite athletes have increased their training hours (Conzelmann & Nagel, 2003). The more time athletes spend competing with and training youth, the greater their chance of preparing for a future career (Heinemann, 1998). The concept of *dual career* refers to the challenge of combining a sports career with studies or work (Ryba et al., 2015). Dual Career (DC) is briefly defined as a "path focused primarily on sport, but which also includes study or employment" (Stambulova & Wylleman, 2015, p.1). Nowadays, it is crucial to consider the athlete from a holistic perspective. Although the sports career is made up of different clearly differentiated stages, such as the initiation, learning, start of the competition, competition at a higher level and sports retirement (Guidotti et al., 2015; Lupo et al., 2015; Stambulova, 2007), there are other equally important dimensions in personal development. Research has shown that athletes face demands in various domains of development, including athletic, psychological, psychosocial, academic/vocational, financial, and legal (Wylleman, 2019; Wylleman et al., 2013). Likewise, previous studies indicate that the intervention and support of these athletes must be approached in a comprehensive manner (Stambulova & Wylleman, 2018; Torregrosa et al., 2004).

1.2. Transition to the post-sport career

The transition to career after sport or athletic retirement is an unavoidable stage for athletes that combines sporting aspects (such as the reasons for ending their sporting career and the satisfaction in it) with non-sporting aspects relevant to starting a new life. Retired athletes must know how to manage this new stage of their lives, start or continue studies or work, rethink their personal identity and renew their lifestyle and social networks. Resources that help athletes in this transition to a post-sport career should include: (a) Advance retirement planning

while the athlete is still active in sport, (b) Voluntary completion of the sports career, (c) Exploration of multiple personal identities and positive experiences in roles other than athlete (eg, as a student or employee), and (d) Effective social support from family, coach, peers, player associations and sports organizations.

All these elements could facilitate the subjective control that athletes have over the withdrawal process and their active coping strategies to address the main challenges of transition. On the other hand, a purely sports-focused identity can lead to an identity crisis (i.e. a misinterpretation of themselves), while a lack of support from coaches, teammates, player organizations and sports entities can generate additional difficulties in retirement planning and subsequent adaptation. The more the athletes are focused exclusively on sport (for example, by working under a professional contract), the more vulnerable they will be during the transition to a post-sport career.

1.3. Sports entrepreneurship

Sport as an industry is among the largest in the world and cuts across other industries, including education and tourism, which have a comprehensive focus on social innovation and social entrepreneurship. Sport has become ingrained in the social fabric of most countries in the world and offers a unique perspective on entrepreneurship. The sports entrepreneurial process is usually initiated by organizations, people or governments that are inserted in both economic and social spheres (Ratten, 2011, 2014).

Entrepreneurship implies that people in the sporting context develop a mindset that encourages innovation. An entrepreneurial mindset is defined as "the way of thinking about business that focuses on creating opportunity in uncertainty and goes hand in hand with a growth-oriented perspective, flexibility, creativity, innovation, and renewal" (Harms et al., 2009, p. 68). Sports entrepreneurs encourage change and continuous innovation by looking for future trends and opportunities. Therefore, sports entrepreneurs can be

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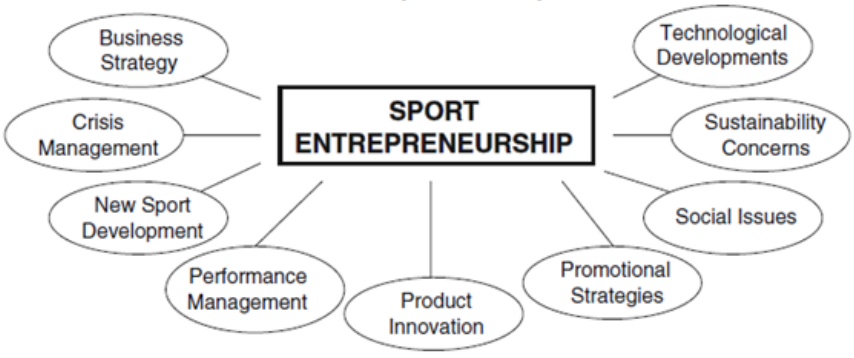
defined as people who are innovative, proactive and take risks in the sports field when developing a venture. These entrepreneurs may have experience in a specific industry (Klepper, 2001) or in a niche area such as sports.

Sports-based entrepreneurship is defined as any form of business or venture in a sporting context. Previous research has discussed the importance of innovation in sport (Mullin et al., 2007; Schwarz & Hunter, 2008). The main characteristics of entrepreneurship are innovation, proactivity and risk taking (Holt et al., 2007). In the sports context, these characteristics are important in both for-profit and non-profit types of sport. Through sport, new ideas can thrive and provide the foundation for entrepreneurship to occur. Sports entrepreneurship is dynamic and impacts various management areas, such as business strategy, crisis management, development of new sports, performance management, product innovation, promotional strategies, social issues, the concerns of sustainability and technological advances (Ratten, 2010) (Figure 1).

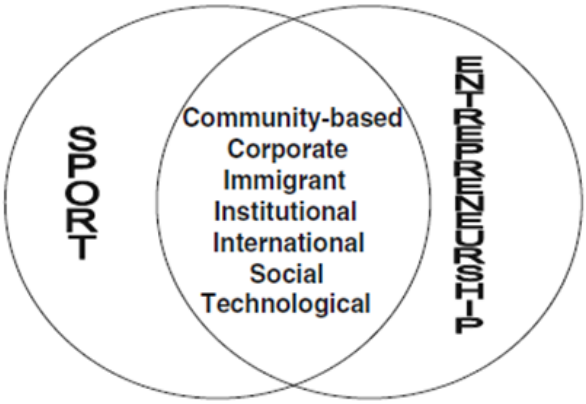
Figure 1. Dynamic aspects of sport-based entrepreneurship (Ratten, 2010)



There are numerous types of entrepreneurship that occur in sport, including community-based entrepreneurship, corporate entrepreneurship, ethnic entrepreneurship, immigrant entrepreneurship, institutional entrepreneurship, international entrepreneurship, social

entrepreneurship, technological entrepreneurship, and female entrepreneurship (Figure 2).

Figure 2. Sport-based entrepreneurship categories (Ratten, 2010)



2. Objectives of the ELCAMP project

With the developed concepts of dual career and the transition of the athlete from the sports career to the job market through taking advantage of the economic development capacities together with the image of the athlete, the ELCAMP proyect wa born. It focuses on strengthening the skills and competences of elite athletes. Paralympians in sport-focused entrepreneurship, using innovative methods and connecting athletes with each other and others interested in entrepreneurship.

The main motive and objective of this project is to support the implementation of the EU Guidelines on Dual Careers for Athletes through the development of a sport-focused entrepreneurship program with innovative approaches through a modular bootcamp curriculum, training toolkits and learning, mentoring and networking platform in line with the needs and expectations of elite and Paralympic athletes.

To develop this project, a dual professional support mechanism was needed for elite and Paralympic athletes in order to initiate, develop,

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implement and scale their business ideas and transform them into socio-economic values for them and the sports industry. This part was implemented with an innovative entrepreneurship bootcamp curriculum through gamification-based learning, networking and mentoring platform to support the employment of these athletes in the sports labor market.

3. ELCAMP Methodology

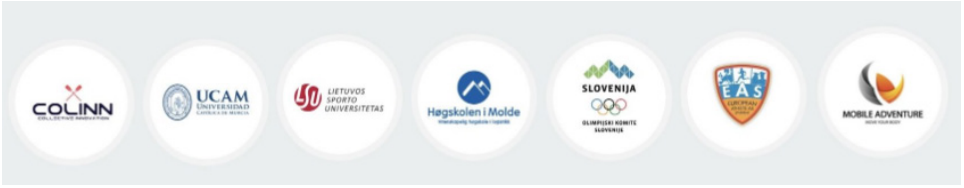
3.1. Population, target groups

The population to which the project was directed are elite athletes and Paralympics from Spain, Slovenia, Norway, Italy, Poland and Lithuania. The final beneficiaries of the project are talented and retired athletes, sports entrepreneurs, sports organizations, start-ups, accelerators and incubators, innovation and technology centers/networks, universities and investors from all over Europe.

3.2. Working group, consortium

The project partnership structure was formed by stakeholders from different levels. The project consortium has a social enterprise working on sports innovation and entrepreneurship (Collective Innovation), three expert universities in dual majors and sports entrepreneurship (UCAM and Lithuania Sports University, Molde University College), an umbrella sports organization at European level (The European Paralympic Committee), a national-level sports umbrella organization (The National Olympic Committee of Slovenia), a European athletes network (The European Network of Athletes as Students) and a sport-related technology expert partner (Mobile Adventure from Poland) (Figure 3).

Figure 3. ELCAMP project partners



3.3. Bootcamp curriculum development

This part of the project consisted of four phases. In the first one, a bibliographic search was carried out and with the results of that search a draft curriculum was created that was contrasted by a group of employer experts. Later it was tested with a survey to determine which one of these were the topics most in demand by the target groups. Finally the experts from the project consortium established the training modules for the course and the gamified tools for its development.

In the first phase of the development of the course, a report was made with a bibliographic search on DC entrepreneurship and accelerated learning courses. This search had two phases, one for each participating country and later an executive report integrated with all the partners.

Subsequently, an interview format with mentors was developed to develop the understanding of sport-focused business competencies. This action was carried out by comparing and evaluating 10 companies/ startups focused on sports.

The next phase was to develop and implement a survey on training needs analysis of elite and Paralympic athletes in sports-focused entrepreneurship that was conducted between the universities of UCAM and Lithuania Sports University, Molde University College. Both in the different interviews and surveys, approval was obtained from the Ethics Committee of the Catholic University of Murcia (UCAM).

The results of this survey were presented at international conferences based on a sample of 186 participants (122 men and 64 women), the older groups being between 18-25 years old (59%) and 26-30 years old (16%) shown in Figure 4.

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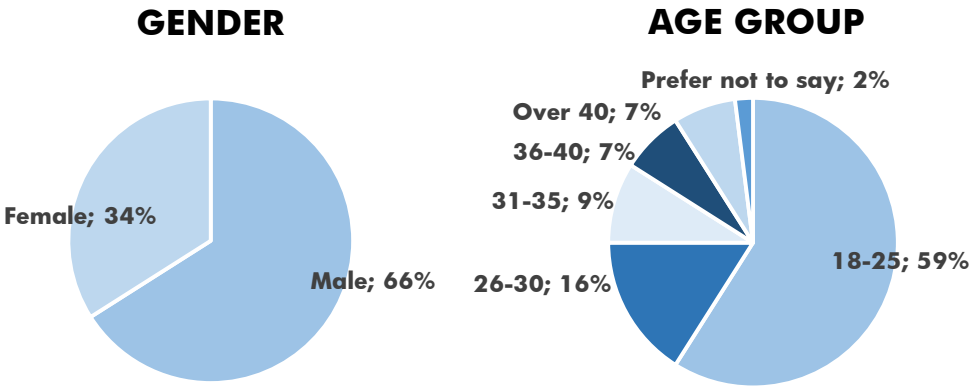
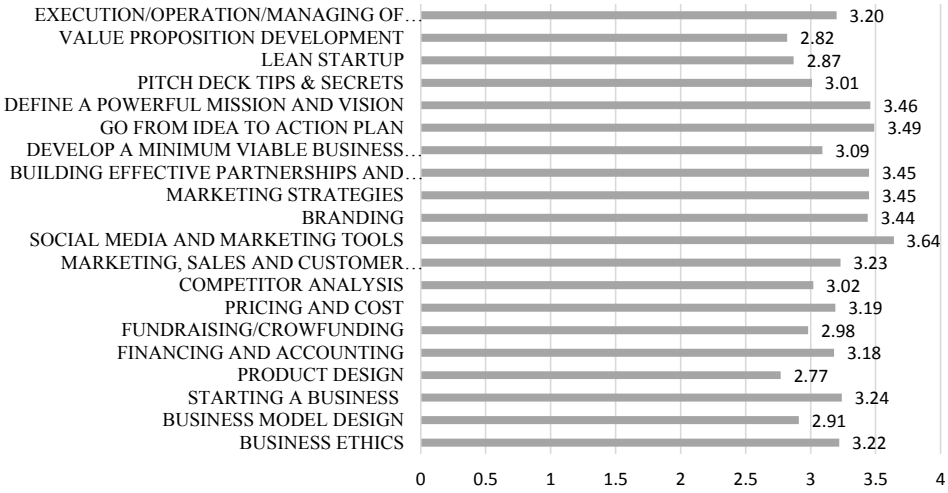
Figure 4. Gender results and age group



Regarding educational level, it should be noted that, in general, participants with a university degree (n=121) are the most prominent, followed by those with a master's degree (n=22) and secondary education or equivalent (n=22). Based on the results on the status of the participants, the vast majority are full-time students (n=53), followed by full-time employees (n=45) and scholarship athletes (n=27). The type of sport with the highest percentage of participation in all countries is individual (55%), followed by team sports (38%).

As the most relevant results in terms of training needs analysis in entrepreneurship focused on sport, this part of the questionnaire corresponds to the choice of a series of answers according to the degree of interest of the participants in the topics, how much they need it in their training, following a 5 Likert scale. Regarding business knowledge, the participants highlighted social networks and marketing tools (M=3.65) and moving from the idea to the action plan (M=3.49). (Figure 5).

Figure 5. General entrepreneurial knowledge



Referring to business awareness, the participants highlighted the skills to transfer the best means of communication for the transmission of messages (M=3.95) and the skills to search for new information (M=3.89); in the opportunity creation business, participants valued decision-making (M=3.53) and problem-solving skills (M=3.49) more highly; concerning business management, participants highlighted strategic planning (M=3.94) and financial management (M=3.83); with respect to the social and social skills of entrepreneurs, the participants value negotiation skills more (M=3.63) and social networks and skills to maintain with employees (M=3.53) (Figure 6) and finally in terms of the key focuses of SportsTech, the participants highlighted the monitoring and analytics (M=3.53) and the sale of tickets and merchandising and the training and recruitment (M=3.45).

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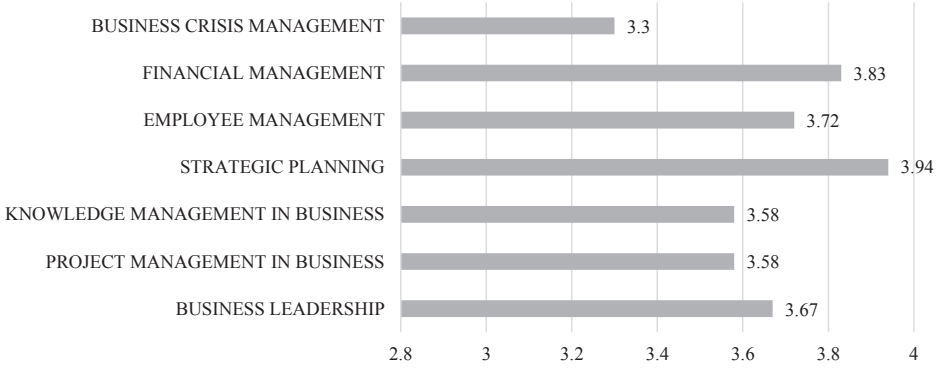
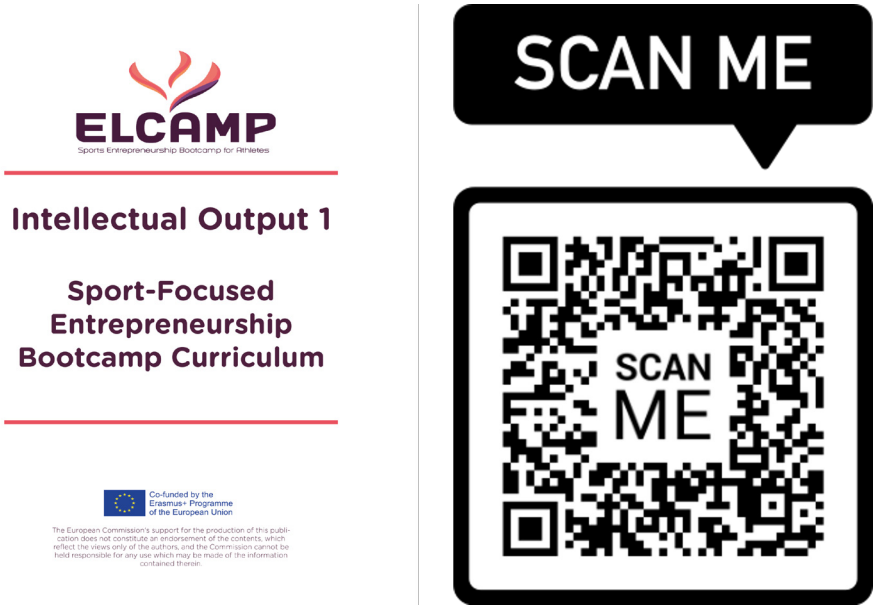
Figure 6. General entrepreneurial social/soft skills



Once the information was collected (literature review, interview, survey), a focus group meeting was organized to evaluate the research findings and determine training needs, preparing a ELCAMP curriculum according to the needs found (Figure 7).

Figure 7. Sport-focused entrepreneurship bootcamp curriculum



3.4. Development of training modules model Bootcamp of entrepreneurship focused on sport

The researchers and managers of this project carried out a distribution of the training modules where, based on a module writing guide, a development format was elaborated with a review of the bibliography related to the theme of the module and in similar modules, carrying out a comparative analysis. In turn, the resources to be used were determined, an index of each module was created, with a glossary of terms and the content based on the data collected. The practical applications to be used and the module evaluation tools (competence measurement) were identified and developed, while work was being done on the related visual design, testing and reviewing the module based on the results of the tests. The result can be seen in the following *ELCAMP training modules link* (Figure 8).

Figure 8. ELCAMP training modules

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3.5. Development of a toolkit for the training course for the Entrepreneurship Bootcamp model focused on sport

In this phase of the project there was again a distribution among the partners of the training tools that were going to be developed with an identification and examination of them, developing the content that will be used in the planning tools and with the creation of the algorithm to be used in these tools. Subsequently, they were tested, reviewed and integrated into the gamification-based learning platform developed by the technology expert partner MOBAD (Mobile Adventure from Poland).

3.6. Pilot tests of the business training camp (Bootcamp) focused on sports for elite athletes ELCAMP and development of a web platform for learning, mentoring and networking based on gamification

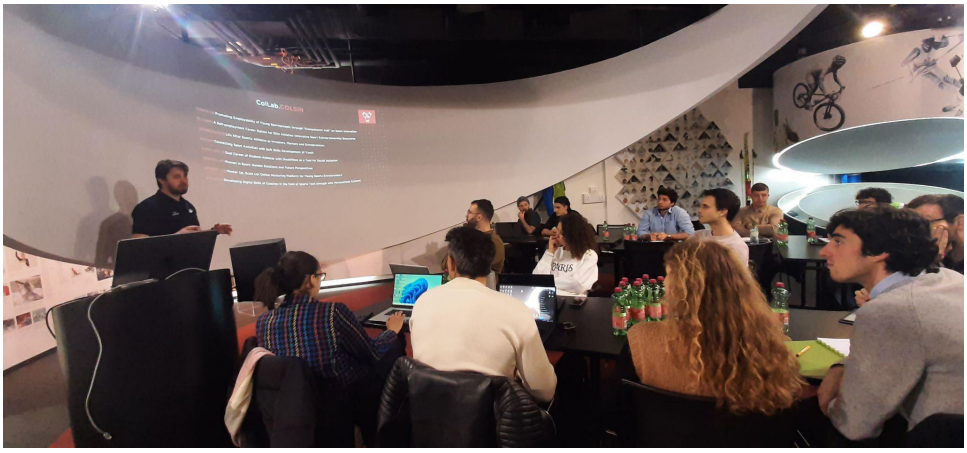
After the creation of modules, the gamification and distribution of them together with the necessary tools for the ELCAMP training course, workshops were organized with 5-8 athletes on entrepreneurship focused on sport, at a local level, with an announcement to the candidates for the bootcamp training, online registration and online training of the business training camp were carried out, gathering information through interviews with the participants. There was an analysis of the results and evaluation of the process that led to a review and update of the training course.

The training workshop was held at the Olympic Committee of Slovenia and was monitored by all the consortium partners in a transnational meeting (Figure 8). For this, the online platform was activated and the web platform was launched based on gamification.

Participants (active and retired high-level athletes) from five different countries shared and discussed the learning experience and completed a technical approach to each of the modules.

In an analysis of the possible dissemination of the ELCAMP web portal, some alternatives for consolidation and publication through sports organizations, Olympic committees and federations were proposed.

Figure 8. Workshop with athletes Slovenia, March 2023



4. Conclusions

Entrepreneurship and development of a business idea in sport is one of the options for many high-level athletes once it comes time for retirement from the sport. For this reason, it is important to provide them with training resources in the area of sports entrepreneurship. To carry out this training, an accelerated course model (BOOTCAMP) was created. It´s necessary that the desing is well supported by scientific literature, by the opinion of employers, by the perception of athletes towards their own needs and in a didactic model that allows through technology, reach competencies and allow athletes to reconcile between their training and competitions with specialized training that allows them to generate future opportunities. ELCAMP is an example of a proper methodology applied to the creation of content necessary for the integration of the high-level athletes in the future labor market.

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Teaching, Training and Mentoring of Student-Athletes

Creating a University-Wide Support System for the Academic Success of Student-Athletes: A Pilot Study

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Abstract

The aim of this research was to determine whether the implementation of a methodology that allows the dual career student-athlete to follow up on a weekly basis the contents of the theoretical and practical sessions of the subjects taught in the classroom reduces the perception of barriers, promotes meaningful learning, and increases the motivation and satisfaction of the basic psychological needs. Eight student-athletes, all of whom were elite athletes, participated in the present research. Participants completed the Dual Career Proficiency Questionnaire, Perception of high-level university student-athletes on the dual career (ESTPORT), Exercise Benefits and Barriers Scale (EBBS), Athletic Identity Measurement Scale (AIMS), Goals perceptions questionnaire, Satisfaction of Psychological Needs in Education, Educational Motivation scale and ad hoc multiple-choice test on knowledge of the subject, before and after the delivery of a course in which a weekly follow-up was conducted with these student-athletes on the theoretical and practical part of the course. After the intervention, there was a significant decrease in the importance given by dual career students to emotional awareness ($p=0.047$), in the perception of emphasis on ego goals ($p=0.041$), and a significant improvement regarding the score obtained in the multiple-choice test score ($p=0.033$). In conclusion, a dual career support intervention based on providing students with the necessary materials to asynchronously follow the development of the subject, together with the use of self-assessment resources and personal tutorials to guide the process has proven to be effective in improving student-athletes' knowledge of the subject, as well as reducing their ego-orientation in the educational context.

Keywords: barriers, dual career, learning, motivation, support.

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1. Introduction

The conciliation between elite sport and education involves a major challenge that many students have to face and results imperative to ensure their holistic development (Kissow, 2015; Knight et al., 2018; Leake & Stodden, 2014). For this reason, innovative approaches such as dual career have emerged in the last years to enable the successful performance of both disciplines. This approach allows the integral development of the athlete in their role as athlete-student and in their transition to life after their sports career (Nyberg et al., 2023), being based on the universal rights of education and sport included in the Universal Declaration of Human Rights (United Nations General Assembly, 1948) and the International Charter of Physical Education, Physical Activity and Sport (UNESCO, 1978).

From an employment perspective, it brings multiple benefits such as the easy access to the labor market and the increased chances of achieving economic security at the end of the life as an athlete (Tekavc et al., 2015). In this way, it allows to build a multidimensional identity which could facilitate the athletes the retirement from elite sport (López de Subijana et al., 2015). Moreover, multiple studies show that the dual career presents advantages about time planning, and since the athletes will not have to sacrifice their studies, also increases the motivation and therefore, the sports performance (Lupo et al., 2015; Stambulova et al., 2015). This is also important to their overall well-being, regarding the prevention of injuries related to stress and overexertion, produced as a consequence of unmanageable high demands from both their academic studies and training (Gustafsson et al., 2008; Sisjord & Sorensen, 2018; Sorkkila et al., 2020). However, achieving a balance between elite sport and education can be very difficult (Linnér et al., 2021; López de Subijana et al., 2015; O'Neill et al., 2013; Quinaud et al., 2022; Ryba et al., 2017; Stambulova et al., 2015). Thus, athletes have more difficulty balancing studies and training as their level of education increases (Harrison et al., 2022; Linnér et al., 2019). This situation leads many athletes to choose as educational options the ones that are easiest to combine with elite sport (Kuettel et al., 2020) and sacrifice educational success when integrating elite sport and education (Cosh

& Tully, 2014). For this reason, it is necessary a proper implementation of the dual career where sport and academic institutions work together and coordinate their efforts to support student-athletes.

In recent years, the increasing interest especially on part of the government and universities in the development of dual career has led to the allocation of a large amount of financial resources (Nyberg et al., 2023). In this regard, the Catholic University of Murcia (UCAM) has implemented different types of methodologies, such as the figure of the tutor-student whose function is to be a nexus between the student-athlete and peers/classes/teachers (Sánchez-Pato et al., 2017). This idea improves the proximity and promotes a more relaxed environment. Despite it, this approach also presents some disadvantages such as inaccurate and biased information (e.g. lack of communication, incomplete or wrong information or quality of the annotation, students taking the subjects in different academic years, or not sending the documentation on a regular basis in order to be able to monitor it on a weekly basis, among others). To address this problem, this project establishes direct communication between the teacher and the athlete-student and has the following objectives a) to determine whether the implementation of a methodology that allows the dual career student-athlete to follow the contents taught in the theoretical and practical classroom sessions of the subjects on a weekly basis reduces the perception of the student athletes about the competences and barriers in achieving success in the dual career; b) to analyze the influence of the proposed work methodology on basic psychological needs, motivation and task and ego orientation; and c) to evaluate the effectiveness of the proposed project on the academic performance of the dual career student-athlete and to promote meaningful learning.

2. Materials and methods

2.1. Design

This is a quasi-experimental design, with a non-probabilistic convenience sample. The institutional ethics committee reviewed and authorized the protocol designed for data collection, in accordance with

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the guidelines from the Helsinki Declaration (code: CE102203). Study participants provided their consent to participate prior to data collection and were informed of the study objectives and the confidentiality of the data obtained during the study.

2.2. Participants

The sample consisted of ten elite male athletes enrolled in the optional subject "kinanthropometry", belonging to the 4th Degree in Sports Science at the Catholic University of Murcia (UCAM) in the 2022/2023 academic year. The sample corresponds to the sample universe.

The inclusion criteria were a) to be enrolled in the subject "kinanthropometry" in the academic year 2022/2023; b) to be part of the dual career programme of the Catholic University of Murcia, which has a student-athlete support system described in previous research (Sánchez-Pato et al., 2017); and c) to have been studying at the university for at least one year. The exclusion criteria were a) failure to complete the initial or final evaluation questionnaires; and b) dropping out of university studies at the time this research was carried out. After applying the inclusion and exclusion criteria, the final sample consisted of eight individuals.

2.3. Procedure

Before the start of the subject, the professor in charge of the subject held a video-conference via Google Meet platform with each student individually to explain how the platform works, how this project was going to be organized and to resolve any doubts that might arise. Each meeting lasted between 30 and 45 minutes. After this first tutorial, the participants were sent the pre-test questionnaire via Google Form platform.

In order to carry out the support programme for the dual career, with regard to the theoretical part, during the development of the subject, all

the theoretical sessions that were developed in a face-to-face manner with the students were recorded. The recordings were processed with the text transcription programme Descript, with a pro account. Descript is a collaborative video and audio editing software that uses Automatic Speech Recognition (ASR) artificial intelligence to make transcriptions from different sources and formats. This programme has been chosen because of the quality of the service it offers, its user-friendly interface and accuracy in transcription, as well as the ability to edit and export the results obtained. After this, the content of the transcript was reviewed by the subject professors and five to ten multiple-choice questions of different levels of difficulty were included at the end of each topic as a self-assessment so that the student-athletes could check whether they had achieved the competences taught in that topic. Then, the written topic was sent to the participants of this research within a maximum period of one week after it was taught in the face to face classes, so that they could follow it up at the same pace as the rest of the students in the subject.

On the other hand, for the acquisition of practical skills, an adaptation of the practices in Google Form was carried out (practice 1: https://acortar.link/3dZfVZ; practice 2: https://acortar.link/jF1ypq; practice 3: https://acortar.link/vhhB7u; practice 4: https://acortar.link/BE3CIA; and practice 5: https://acortar.link/MiVQJz) with various activities related to the generation of audiovisual resources so that the participants could progressively acquire the skills that would guarantee them the acquisition of the knowledge of the practical part of the course, according to the University regulations.

In addition, a self-assessment rubric was included at the end of each practical to evaluate the competences acquired. This rubric was used by the participants, in the framework of a student self-assessment, and by the professor in charge of the subject after viewing the audiovisual resources generated by the students, thus enabling the professor to give feedback to the students on their degree of acquisition of practical competences. All practices were sent to the students at the beginning of the course, recommending them to carry out a practical session approximately every two weeks.

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Participants were able to request any tutorials they needed for clarification of theoretical or practical content. In addition, at the end of the subject, an individual video-conference was held with each of them to close the course, after which post-test questionnaires were sent to them.

For both the pre-test and the post-test, participants did not receive any extra instructions or explanations about the purpose of the questionnaire, apart from what was indicated in the questionnaire itself. Participants completed the questionnaire in approximately 20-30 min.

2.4. Instruments

The questionnaire administered to participants in both the pre-test and post-test comprised validated instruments utilized in previous studies. Specifically, participants completed the Dual Career Competency Questionnaire (De Brandt et al., 2018). It is a questionnaire that is composed of questions about the competences that they believe could help them achieve success in the dual career, as well as their level of development in each of them. A Likert scale of 1 (strongly disagree) to 5 (strongly agree) points was used for its completion and allows to establish four dimensions (dual career management; career planning; emotional awareness; and social intelligence and adaptability) (De Brandt et al., 2018).

The "Perception of high-level university student-athletes on the dual career" (ESTPORT) questionnaire (Sánchez-Pato et al., 2016) was also administered. In this study, four items pertaining to the evaluation of the academic career and items related to the barriers faced in pursuing a dual career were utilized. The final score for this dimension was computed based on previous research (Abenza-Cano et al., 2020; Mateo-Orcajada et al., 2022). Responses were recorded on a Likert-type scale ranging from 1 (strongly disagree) to 5 (strongly agree).

The third questionnaire used was the Exercise Benefits and Barriers Scale (EBBS) (Sechrist et al., 1987). The 14 questions related to the exercise barriers dimension were introduced, with a four-category Likert

scale response from 1 (strongly disagree) to 4 (strongly agree). The final score for this dimension was calculated following the methodology of prior studies (Sechrist et al., 1987).

To measure athletic identification, the Athletic Identity Measurement Scale (AIMS) was used (Visek et al., 2008). A total of 7 items completed on a scale of 1 (strongly disagree) to 7 (strongly agree) points allow measuring aspects of athletic identification. These items are grouped into several scales, including social identity, exclusivity, negative affectivity, and an overall score (Visek et al., 2008).

Goals perceptions were assessed with Kaplan and Maehr's questionnaire. Two sections of the questionnaire "Personal Achievement Goals Scales" related to perceptions of emphasis on ego goals and perceptions of emphasis on task goals were used. Five items make up each section and are completed using a Likert scale from 1 (strongly disagree) to 5 (strongly agree). The final score for each of the two dimensions was calculated following the methodology of previous research (Kaplan & Maehr, 1999).

With regard to the assessment of psychological variables, the Satisfaction of Psychological Needs in Education was evaluated (León et al., 2011). This scale examines students' perception of their basic psychological needs in the university education context. It comprises 15 items that measure autonomy, competence, and relatedness, employing a five-point Likert-type response format. The final scores for each dimension were calculated based on previous studies (León et al., 2011).

The Educational Motivation scale (Núñez et al., 2005) was used to measure intrinsic motivation, extrinsic motivation, and demotivation. This 12-item scale includes seven categories: intrinsic motivation for knowledge, intrinsic motivation for achievement, intrinsic motivation for stimulating experiences, extrinsic motivation - identified regulation, extrinsic motivation - introjected regulation, extrinsic motivation - external regulation and amotivation. Responses were recorded on a Likert-type scale ranging from 1 to 7. The scores for each of these dimensions were calculated based on previous studies (Núñez et al., 2005).

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Finally, in both the pre-test and post-test, participants completed an ad hoc multiple-choice test on knowledge of the subject, which has already been used in previous research (Vaquero-Cristóbal et al., 2021). It consisted of 10 questions with four answer options, and a point was awarded when the participant got the answer right (Vaquero-Cristóbal et al., 2021).

2.5. Data analysis

Analysis of normality was performed using the Shapiro-Wilk test, as well as analysis of skewness, kurtosis, and variance. As the variables did not follow a normal distribution, nonparametric tests were used for their analysis. For the comparison of differences in the study variables between pre- and post-test measurements, the Wilcoxon test for related sample was used. The value $p<0.05$ was used to establish statistical significance. Statistical analysis was performed using the SPSS statistical package (v.25.0, SPSS, Inc.).

3. Results

The differences in the study variables between the pre- and post-test measurements are shown in Table 1. After the intervention, there was a significant decrease in the importance given by dual career students to emotional awareness ($p=0.047$). No significant differences were found in the importance given to dual career management ($p=0.287$), career planning ($p=0.121$), nor to social intelligence and adaptability ($p=0.201$), nor in the perceived possession of any of these competencies ($p=0.231$-0.680).

Regarding the evaluation of the resources offered to carry out the dual career, no significant differences were found in the flexibility of the university curriculum ($p=1.000$), the university distance learning ($p=0.317$), the implementation of teachers' methodological strategies ($p=0.083$), nor in the university's monitoring of the dual career in sport ($p=0.564$). Nor were differences found in the perceived barriers to

carrying out the dual career (p=0.733), nor in the barriers to sport practice (p=0.362) after the intervention.

Athletic identity was also unchanged after the intervention, with a similar total score (p=0.622), as well as in its dimensions of social identity (p=0.458), exclusivity (p=0.157), and negative affectivity (p=0.596).

Regarding goals perceptions, no significant differences were found in the perception of emphasis on task goals (p=0.140), but significant differences were found in the perception of emphasis on ego goals (p=0.041). However, no significant differences were found in any of the basic psychological needs (autonomy: p=0.066; competence: p=1.000; relatedness: p=0.285), nor in the variables related to motivation (intrinsic motivation for knowledge: p=0.236; intrinsic motivation for achievement: p=0.205; intrinsic motivation for stimulating experiences: p=0.865; extrinsic motivation - identified regulation: p=0.351; extrinsic motivation - introjected regulation: p=0.362; extrinsic motivation - external regulation: p=0.528; amotivation: p=0.705).

Regarding the score obtained in the multiple-choice test, the dual career participants presented significant improvements after the intervention (p=0.033).

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Table 1. Pre-and post-test differences in the study variables

Variable	Pre-test		Post-test		Z	p
	M	SD	M	SD		
Importance given to...						
Dual Career Management	4.53	0.27	4.36	0.52	-1.065	0.287
Career Planning	4.20	0.49	4.00	0.53	-1.552	0.121
Emotional Awareness	4.48	0.37	4.21	0.50	-1.983	**0.047**
Social Intelligence & Adaptability	4.29	0.44	4.11	0.55	-1.279	0.201
To what extent do you have these competences?						
Dual Career Management	4.11	0.47	3.89	0.77	-1.198	0.231
Career Planning	3.83	0.51	3.75	0.89	-0.425	0.671
Emotional Awareness	3.86	0.68	3.93	0.72	-0.412	0.680
Social Intelligence & Adaptability	4.13	0.43	3.79	0.85	-1.781	0.075
How do you rate...						
The flexible university curriculum	1.63	0.74	1.63	0.52	0.000	1.000
University distance learning	2.25	1.17	1.75	0.46	-1.000	0.317
Implementation of teachers' methodological strategies	1.38	0.52	1.00	0.01	-1.732	0.083
The university's monitoring of the dual career in sport	3.75	1.58	3.63	1.51	-0.577	0.564
Barriers						
In dual career	2.69	0.82	2.59	0.89	-0.341	0.733
In sport (in general)	4.18	0.49	4.06	0.37	-0.912	0.362
Athletic identity						
Social identity	19.13	1.81	18.75	1.91	-0.742	0.458
Exclusivity	10.63	3.29	11.50	3.16	-1.414	0.157
Negative affectivity	10.13	3.60	9.50	3.89	-0.530	0.596
Total Athletic Identity	39.88	5.69	39.75	6.96	-0.493	0.622
Goals perceptions						
Perceptions of emphasis on ego goals	1.70	0.73	1.27	0.32	-2.043	**0.041**
Perceptions of emphasis on task goals	4.41	0.59	4.56	0.53	-1.476	0.140
Basic Psychological Needs						
Autonomy	4.13	0.62	3.85	0.82	-1.841	0.066
Competence	4.28	0.67	4.28	0.85	0.000	1.000
Relatedness	4.33	0.62	4.48	0.60	-1.069	0.285
Motivation						
Intrinsic motivation for knowledge	4.72	0.90	4.38	1.26	-1.185	0.236
Intrinsic motivation for achievement	4.03	1.17	3.59	1.55	-1.266	0.205
Intrinsic motivation for stimulating experiences	3.38	1.10	3.47	1.49	-0.170	0.865
Extrinsic motivation – identified regulation	5.13	0.83	4.91	1.16	-0.933	0.351
Extrinsic motivation – introjected regulation	4.06	1.02	3.72	1.51	-0.912	0.362
Extrinsic motivation – external regulation	4.38	1.32	4.06	1.78	-0.632	0.528
Amotivation	1.41	0.60	1.44	0.55	-0.378	0.705
Multiple-choice score	4.88	1.13	6.50	1.31	-2.132	**0.033**

4. Discussion

The first objective of this research was to determine whether the implementation of a methodology that allows the dual career student-athlete to follow the contents taught in the theoretical and practical classroom sessions of the subjects on a weekly basis reduces the perception of the student athletes about the competences and barriers in achieving success in the dual career. In this sense, it has been observed that the use of support materials and guiding methodology during a four-month period did not lead to a decrease in the perception of barriers on the part of the participants nor a modification in the perception about the competences in dual career. In the case of dual career students, time compatibility has been one of the main barriers highlighted when it comes to combining the timetables involved in their sporting careers with those necessary to maintain a correct academic training (Mejías et al., 2021). This sometimes makes it difficult for the student-athlete to reach a sufficient level of understanding to be able to pass the subject satisfactorily, especially when the subjects are practical, which generates frustration and increases their perception that they are incapable of achieving a balance between their facet as a sportsperson and as a student in the search for success in the dual career (Abenza-Cano et al., 2020). Previous research has indicated that the use of resources that allow for asynchronous learning of student-athletes, such as those used in this research, have shown positive effects in the ability of student-athletes to self-regulate their teaching and sporting schedules, being able to access teaching resources at all times and gaining greater control of the educational environment (Abenza-Cano et al., 2020; Mateu et al., 2019; Perez-Rivases et al., 2017). However, the fact that these resources were used in only one subject in the final year of the degree may have reduced the effect of the intervention on the student-athletes' perception of barriers.

The second objective established in the present research was to analyze the influence of the proposed work methodology on basic psychological needs, motivation and task and ego orientation. In this sense, it was observed that the student-athletes who participated in the research had a reduced ego-orientation after the research. Previous

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research has related ego-orientation to a more superficial cognitive learning strategy, whereas a mastery or task orientation can be found to be more related to learning strategies that go deeper into the content (Somuncuoglu & Yildirim, 1999). Ego-oriented students are concerned with being judged as proficient, and their perceptions of their ability tend to be compared to the group or normativity (Ames & Archer, 1988; Skaalvik, 1997). That makes ego-orientation more likely to cause anxiety and it was negatively related to achievement and self-perceptions (Somuncuoglu & Yildirim, 1999). Therefore, a significant reduction of ego-orientation can help to improve the teaching and learning process of student-athletes. On the other hand, motivation and basic psychological needs are of great importance in the educational context, and it has been found that high levels of satisfaction of basic psychological needs and high levels of motivation favor the acquisition of knowledge, as they are related, especially in the university population, to greater involvement by students in the proposed activities (Müller et al., 2021; Navea-Martín & Varela Montero, 2019). In this respect, it has been observed that interventions based on support strategies for university students, such as those implemented in the present research, improve the satisfaction of basic psychological needs in education and increase motivation (Gutiérrez & Tomás, 2018). In contrast, neither basic psychological needs nor motivation-related variables were modified by the intervention, which may be due to the fact that at the time of the pre-test, athletes showed high levels of these variables, so perhaps a longer intervention implemented in more student-athletes is necessary to achieve significant changes.

And the third objective of this project was to evaluate the effectiveness of the proposed project on the academic performance of the dual career student-athlete and to promote meaningful learning. In this sense, a significant increase in the knowledge expressed by the participants about the subject was observed. It has been shown that, in the university population, self-assessment has benefits such as improving the learning process, favoring an active and real involvement of the students in the assessment, improving autonomy, motivation and the ability to reflect on the process, being able to identify where they need to improve (Calatayud & Alonso Tena, 2022). This resource,

together with the monitoring carried out by the teachers of the subject and the opportunity to visualize the theoretical classes and carry out the practices asynchronously, may have favored a greater involvement and deepening of the student-athletes in their learning process (Abenza-Cano et al., 2020).

5. Conclusion

A dual career support intervention based on making the necessary materials available to students to asynchronously follow the development of the subject, together with the use of self-assessment resources and personal tutorials to guide the process has proven to be effective in improving student-athletes' knowledge of the subject, as well as reducing their ego-orientation in the educational context. However, interventions of longer duration including a larger number of student-athletes may be needed to produce significant changes in the variables of motivation, basic psychological needs in education or the perception of barriers in the dual career.

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Academy of Physical Education in Katowice as a Participant in the Polish Program Supporting Student-Athlete's Dual-Career – National Academic Representation

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Abstract

The National Academic Representation (NAR) was established by the Minister of Education and Science in 2020 as nationwide project addressed to all universities in Poland. Its main aim is to support student-athletes in their learning processes and enable development of their sports careers. The curriculum of student-athletes at NAR is implemented in the form of individual organization of classes during the academic year. In the case of Academy of Physical Education in Katowice, Individual Plan and Program of Studies (IPPS) system has been created, which consists of individual course selection and convenient dates for attendance at classes and exams. The aim of the publication is to present this program and analyze the participation of the APE in Katowice in the NAR project over the last three years. Obtained results points that APE Katowice is a leader in the number of student-athletes in Poland. Thanks to the NAR project and the implementation of the IPPS system, it was possible to facilitate the combination of a sports career with studying for athletes at the highest level. As many as one third of all Polish student-athletes decided to study at APE Katowice. Individual sports, especially winter sports, are at the forefront among students.

Keywords: dual-career, student-athlete, National Academy Representation, APE Katowice.

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1. Introduction

Nowadays, the demands placed on the professional athletes require great dedication in the pursuit of broadly understood perfection. This means that athletes spend most of their time developing their sports career at the expense of other aspects of everyday life. At the same time, they are expected to continue their education, including studies. This is necessary to support them in their personal development and thus increase chances on the labor market after the end of their sports career. The parallel emphasis on education and sport can fail in both spheres, all because of the amount of time and work they need. The challenge is even greater when there are new responsibilities and roles in life, such as being a parent (Aquilina, 2013). In connection with these problems, the term "dual-career" began to be researched and developed. It is a successful combination of a professional sports career and education. The levels of professional sports, the age of the athletes, as well as the barriers that appear in different countries were taken into account (European Parliament, 2003).

As it turns out, education is a very helpful factor during professional involvement in sport, as it facilitates entering a new role and responsibilities. An obstacle that appears on the way of student-athletes is a limited number or a complete lack of appropriate cooperation between sports and educational institutions and the labor market. Implementing a balanced government policy in such arrangements, and thus systematic counselling, may be essential in undertaking a dual career. Implementing programs tailored to the needs of elite athletes can be crucial to their development as a student-athletes (European Commission, 2012).

An important step was the signing of an EU document that defined the dual career as a policy area requiring a properly organized system of cooperation, as well as specialized staff and regular monitoring of the effectiveness of programs. In order to avoid large differences between the countries and to strengthen their cooperation, it was decided to create platforms for the exchange of experiences and thoughts. These include sports forums, meetings of sports and education ministers or sports directors, and others (Capranica & Guidotti, 2016).

In 2015, the Digital Economy LAB Team (DELAB) from the University of Warsaw was established at the request of the Ministry of Sport and Tourism. Its task was to prepare a report on the double-track career of athletes in Poland - a diagnosis of the situation. The study covered 23 universities, taking into account their regulations, statutes, strategies, etc. The most important task was to determine the difficulties associated with taking up a career as an athlete and a pupil/student, as well as to compile statistical data showing the percentage of athletes with minor problems in combining a sports career and study or work (DELAB, 2023).

The Polish Ministry of Education and Science also responded to the hardships and requirements imposed on the athletes. In 2020, the National Academic Representation project was launched, which aims to enable the pursuit of a sports career and academic studies at the same time. Thanks to this initiative, students-athletes not only have the possibility of an individual, flexible approach to the organization of classes, but also receive funding for it.

Public and non-public universities were invited to participate in the project, where the number of full-time students is at least 200 and among them are athletes of Olympic training, medalists of sports events such as the Olympic Games, European Games, World Senior Championships and European Senior Championships, as well as medalists of Universiades (World University Games) and academic world championships and also students-athletes with disabilities, including the hearing impairment. In addition, student athletes having a Sport Champion rank or International Champion title are also taken into account (NAR, 2023).

The funding is provided directly to the university and it amounts to PLN 19 800 (approx. EUR 4 300) per year per student-athlete. This sum is intended for organizing 100 hours of individual study program conducted by academic teachers. Lectures take the form of tutoring, thanks to which the student achieves the required learning outcomes in the selected field of study while continuing his sports career. The costs also include e-learning (Polish Ministry of Education and Science, 2023).

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In 2020, more than PLN 7.1 million (EUR 1.5 million) has been allocated to the program, which involved 414 student-athletes from 42 universities in Poland. In turn, in 2021, the co-financing increased to PLN 9.5 million (over EUR 2 million), and 502 student-athletes from 37 universities took part in the programme. Almost 60% of the above-mentioned athletes study at one of the six Academies of Physical Education (NAR, 2023).

The implementation of the project coincided with the COVID-19 pandemic and the dissemination of remote learning at Polish universities. Interestingly, it turned out to be practical for student-athletes, because remote learning gave the opportunity to have direct contact with these students during multi-day training camps in which they often participate.

Polish universities willingly participate in the project, especially when it comes to sports universities. A common form of facilitating a dual career is the Individual Course of Study. It consists in minimizing the requirements for attendance at classes, which has been provided for in the Act of July 20, 2018 on law in higher education.

The Academy of Physical Education in Katowice is a public university specializing in sport and physical education. It is one of six universities of this type in Poland and the only one in Silesia. Recently, the university was awarded and received the A+ category in the discipline of physical culture science. According to the Act on Higher Education and Science, this proves the very high level of scientific activity conducted by the employees of the Academy of Physical Education in Katowice, presented in scientific articles and monographs, patents for inventions, commercialization of research and development results, and the effectiveness of applying for scientific grants through national and foreign competitions (Polish Ministry of Education and Science, 2023).

Student-athletes of the Academy of Physical Education in Katowice also have the opportunity to improve their sports training, using modern research laboratories, e.g. in the strength and power laboratory, hypoxic chamber or human performance laboratory. This is another support in their sports career, and at the same time the opportunity to conduct research and continue education.

Moreover, The Academy of Physical Education University Sports Association Club (AZS) associates about 230 athletes in 20 sections, the majority of whom are university students. This club is known as one of the best sport clubs in Poland and in many Polish sport classifications it is ranked at the top (AZS AWF Katowice, 2023).

In the Academy of Physical Education in Katowice, there was created IPPS e.g. Individual Plan and Program of Studies. This system includes individual approach and arrangements for attending classes and exam dates, as well as the possibility of extending the period of study. According to the applicable study regulations, IPPS provides support to a student who "is a member of the Polish National Team or its reserve, or the World University Games team; is an individual sports athlete of Olympic disciplines, and has the First Sports, Champion Sports rank or International Champion title; is a player in a sports team which competes in central championships organized by Polish Sport Associations" (APE in Katowice, 2022).

2. Purpose

The aim of the study was to analyze the number of student-athletes of the Academy of Physical Education in Katowice in relation to the number of participants of the National Academic Representation in Poland. The following research questions were formulated:

1. Which types of universities are most often chosen by student-athletes?
2. What is the participation of students-athletes of the Academy of Physical Education in Katowice in comparison with other Polish universities?
3. Representatives of what sports are the main ones at AWF Katowice?

3. Material and methods

This article analyzes data from the statistics of the Polish Ministry of Education and Science. They concerned all public and non-public

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universities that declared their participation in the governmental NRA project. Then, on the basis of this information, those that concerned only AWF Katowice were extracted. The sample consisted of student-athletes who participated in the NRA program in Poland. Statistics are collected and made available to the public in each calendar year with the latest data supplemented.

In addition, it was undertaken to specify the sports disciplines represented by students-athletes of APE Katowice.

4. Results

Based on the collected data on the number of student-athletes at individual universities (Table 1), it can be safely concluded that the leading universities are APE in Poland (almost 60%). It is probably not surprising that sports universities stand out from the rest, although taking into account the number of APE in Poland (6) and the rest of the universities participating in the project (31 public and 5 non-public) it is a great achievement. Moreover, this number is constantly growing. For the total number of NAR participants in 2021, there was an increase of 21% compared to the previous one, and in 2022 it was another 11%.

The number of student-athletes of the Academy of Physical Education in Katowice covered by the program was 140 students in 2020, 179 students in 2021 and 161 students in 2022. The Academy is the university that educates the largest number of student-athletes in Poland (one third of all).

Table 1. Participation of universities/students in the NAR

University types	2020			2021			2022		
	N° universities	N° students	% students	N° universities	N° students	% students	N° universities	N° students	% students
University	13	53	12.8	11	59	11.75	9	58	10.34
University of Economics	2	4	0.97	2	4	0.8	2	4	0.7
Polytechnics	6	24	5.8	5	47	9.36	7	66	11.76
Academies of Physical Education	5	243	58.7	6	289	57.57	6	308	54.9
State Higher Vocational Schools	8	13	3.14	3	3	0.6	6	24	4.3
Other public universities	3	15	3.62	3	12	2.39	3	12	2.1
Public universities	37	352	85.02	30	414	82.47	33	472	84.1
Private universities	5	62	14.98	7	88	17.53	5	89	15.86
Total	42	414	100	37	502	100	38	561	100
APE Katowice		140	33.82		179	35.66		161	28.7

Source: statistics collected by the Polish Ministry of Education and Science.

There are six Academies of Physical Education in Poland - in Cracow, Gdansk, Poznan, Wroclaw, Warsaw and the only one in Silesia - in Katowice. Focusing only on sports universities, APE Katowice also takes the lead when it comes to the number of student-athletes (Table 2). In a report prepared for the Ministry of Sport and Tourism entitled "Dual career of athletes in Poland. Diagnosis of the situation", the Academy of Physical Education in Katowice is mentioned as one of the best universities in Poland in terms of supporting the dual career of students-athletes. More than half of the participants of the NAR project study here.

Over the past three years, the number of student-athletes has been changing. Compared to 2020 and 2021, NAR participants increased

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by 28%. In the last year (2022), a decrease of 10% in numbers of students was noticed.

Table 2. Participation of APE Katowice among all APEs in Poland

University	2020			2021			2022		
	N° universities	N° students	%	N° universities	N° students	%	N° universities	N° students	%
Academies of Physical Education	6	243	100	6	289	100	6	308	100
APE Katowice	1	140	58	1	179	62	1	161	52

Source: own calculations based on statistics from the Ministry of Education and Science.

With regard to sports careers and sports practiced by our student-athletes, the largest group are the representatives of individual sports. Most often it is track and field, swimming or judo. A large team also represents the APE in Katowice in the winter sports, it is as much as 35% of students. Among team sports there are also NAR participants. They are mainly ice hockey and handball players.

In the last three years, the number of sports players has increased - swimming (by 57%), nordic skiing (by 33%), speed skating (by 50%), while the number of biathletes was more than doubled. When it comes to team sports, the number of handball players and ice hockey players remains at a high level, and football has increased (Table 3).

Table 3
N° of students representing sport disciplines at APE Katowice

SPORTS	2020	2021	2022
Soccer	3	3	6
Volleyball	0	1	1
Basketball	2	3	2
Handball	13	17	15
Ice Hockey	10	20	10
Other team sports	3	7	1
TOTAL TEAM SPORTS	**31**	**51**	**34**
Athletics	12	12	8
Swimming	7	10	11
Gymnastics	3	3	4
Nordic skiing	18	23	24
Alpine skiing	13	15	10
Biathlon	4	10	11
Speed skating	8	11	12
Canoeing	6	6	5
Other individual sports	7	13	18
Boxing	2	1	1
Judo	15	13	9
Fencing	7	5	7
Wrestling	3	3	3
Other combat sports	4	3	3
TOTAL	**140**	**179**	**161**

Source: APE in Katowice.

5. Discussion and conclusions

The creation and implementation of the NAR project gives a new perspective at the problems related to dual career. Student-athletes received support from the Polish government, and thus new opportunities were created for them. State funding and the individual approach of the university made it easier to combine an athlete's career with education. The proof of this is the growing number of project participants every year.

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Moreover, system IPPS created by APE Katowice helps students-athletes to a large extent in reconciling a sports career with education, primarily through individual arrangements regarding attendance at classes, flexible dates of classes and exams, and the possibility of extending the period of study (Tomik et al., 2022). International research has shown that properly prepared support systems for student-athletes at the university affect not only facilitating combining two careers, but also their academic achievements and overall satisfaction (Henriksen et al., 2014). At the same time, the lack of such help leads to difficulties and problems in their sports career and education (Ryba et al., 2015). By taking the necessary steps to search for new educational solutions, new scientific and sports opportunities, the university could attract many valuable student-athletes, which would certainly translate into better results in university rankings.

The following conclusions were drawn from the conducted research:

1. The universities most often chosen by students-athletes are the Academies of Physical Education. This is a satisfactory result due to the small number of such universities in Poland (only 6). This may be due to the tradition of these universities related to facilitations for student-athletes and the specificity of offered courses.
2. APE in Katowice is a university that educates the largest number of student-athletes in Poland. In the case of sports universities in Poland (APE) it remains at the level of over 55-60%, and compared to the national background, it is one third of all student-athletes. The reason for this may be the Individual Plans and Study Programs solution dedicated to athletes.
3. The largest group of representatives are student-athletes practicing individual sports, including winter sports. This is over 70% of participants in the NAR program at APE Katowice. The university club AZS AWF Katowice specializes in these sports.

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Empowering Excellence: AI-Enhanced Tutorship for Student Athletes in Higher Education

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Abstract

This chapter explores the intersection of sports dual career and higher education, focusing on how Artificial Intelligence (AI) can be harnessed to support student-athletes in their academic and athletic pursuits. Student-athletes often face balancing their time between sports commitments and academic responsibilities. Leveraging AI technologies can help address these challenges effectively. The article overviews AI, its applications, and its transformative potential. Specifically, it delves into how AI can revolutionize student-athlete support in higher education. AI-based learning platforms offer flexible and personalized educational solutions, catering to diverse learning styles and paces. AI tutoring systems can aid in managing academic pressures and improving performance of the student-athlete. The chapter further emphasizes how AI can provide valuable insights to faculty members about the unique challenges faced by student-athletes, fostering a more supportive learning environment. Furthermore, using AI enables the creation of specialized peer support networks tailored to student-athletes' needs. This collaborative approach can significantly enhance their overall university experience. In conclusion, by integrating AI technology into higher education, we can empower student-athletes, enabling them to achieve excellence both on and off the field.

Keywords: student-athletes, artificial intelligence (AI), tutorship, dual career, higher education.

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1. Introduction

Artificial Intelligence (AI), a diverse domain within computer science, is devoted to developing systems that can execute tasks typically necessitating human intelligence. These tasks include learning and adapting to new information or environments, understanding and responding to natural language, recognizing patterns, problem-solving, and decision-making. AI can be categorized into two types: Narrow AI, designed to perform a specific task such as voice recognition, and General AI, which can theoretically perform any intellectual task that a human being can.

Artificial intelligence applications permeate a wide range of sectors. For instance, in healthcare, AI aids in identifying diseases, tailoring medicine, and pioneering drug discovery, employing machine learning algorithms to predict or make decisions rooted in extensive patient data sets. In the financial sector, AI plays a crucial role in flagging fraudulent transactions, overseeing investments, and delivering customer services via AI-powered chatbots (Halaweh, 2023).

In transportation, autonomous vehicles use AI to interpret sensor data, navigate the road, and avoid obstacles. In education, AI can personalize learning content based on individual student needs, identify learning gaps, and provide feedback. In entertainment, AI is used in gaming, movie recommendations, and virtual reality. AI also plays a role in security and defence, aiding facial recognition systems and autonomous drones. From streamlining monotonous tasks and delivering customer service via chatbots to sophisticated predictive analytics, the scope of artificial intelligence in business is vast (Finley, 2023). AI's ability to process and analyze vast amounts of data also makes it invaluable in scientific research, where it is used in climate modelling, genetic research, and space exploration, among other fields. While AI has vast potential, it also presents ethical considerations and challenges, including data privacy, job displacement due to automation, and algorithmic biases. As AI evolves, these factors will play an increasingly central role in discussions about integrating and regulating AI technology (Iliescu et al., 2022).

AI has found significant applications across numerous sectors, including education. In education, AI is revolutionizing teaching and learning processes in profound ways. For instance, adaptive learning platforms can tailor educational content to meet each student's unique needs, fostering a more personalized and efficient learning experience. These systems can evaluate a student's understanding, identify areas of weakness, and then adapt the instructional material accordingly.

Furthermore, AI can automate administrative tasks, saving educational institutions time and resources. Tasks such as grading assignments and scheduling can be streamlined with AI, freeing teachers to focus more on instruction and student interaction. AI-powered chatbots and virtual tutors are also becoming increasingly prevalent. These tools can offer round-the-clock assistance, answering students' questions and explaining complex topics, enhancing learning. Moreover, they can learn from each interaction, continuously improving their support (Saqib et al., 2023).

AI is also assisting in predicting student outcomes and early detection of at-risk students. By analyzing vast amounts of data, predictive AI models can identify patterns that indicate a student might be struggling academically, allowing educators to intervene proactively.

In higher education, AI has been used in the recruitment process by analyzing and predicting enrollment patterns and even in research, where AI can process and analyze massive datasets in a way that would be otherwise impossible for humans. Despite its numerous benefits, AI's application in education comes with challenges, such as data privacy issues, the digital divide in accessing AI-based resources, and the need for careful implementation to avoid replacing the irreplaceable human touch in education. As we continue integrating AI into our education systems, these considerations will play a crucial role in shaping how we utilize this powerful technology to enhance learning while preserving essential human values. Artificial Intelligence (AI) swiftly alters the education landscape, offering innovative tools and methods to personalize and enhance the learning experience. Among these advancements, the potential of AI in tutorship for student-athletes is particularly significant (Zhu et al., 2023).

University student-athletes represent a unique demographic that requires flexible, tailored educational solutions due to their dual

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commitments to academics and sports. Balancing the rigorous demands of athletic training and competition with pursuing academic excellence can be challenging (Isidori, 2015). That is where AI technology, specifically in the form of AI-powered tutoring, comes into play.

AI tutoring systems are built upon complex algorithms that learn from interactions, providing personalized guidance and resources. They are designed to adapt their instructional strategies based on the learner's needs, strengths, weaknesses, and pace of learning. This personalized approach is critical for student-athletes as it allows for flexible learning schedules that accommodate their often irregular and demanding training times (Dilekci & Karatay, 2023). These systems can offer round-the-clock assistance, a feature particularly beneficial for student-athletes who may need to study at unconventional hours due to their athletic commitments. AI tutors can provide instant feedback, clarify doubts, and guide students through complex concepts at any time of the day.

Moreover, AI tutoring systems can track a student's progress over time, identifying areas of improvement and those requiring additional attention. This ability can help student-athletes stay on top of their academic performance, even when their focus might be divided between sports and studies. Beyond personalized learning experiences, AI has the potential to enhance the athletic component of a student-athlete's life. AI can be used in sports training programs to analyze performance data, assist in designing training regimens, and even help prevent injuries by identifying potential risk factors.

Furthermore, AI can be instrumental in career guidance for student-athletes, helping them navigate the possibilities of professional athletics and traditional career paths post-graduation. AI systems can provide information about potential career trajectories, making predictions based on performance statistics, academic interests, and market trends.

2. Challenges in student-athlete education

Student-athletes face a distinct set of challenges in managing their dual career pathways. Balancing rigorous academic and athletic

commitments requires exceptional time-management skills, resilience, and determination (Conde et al., 2021).

One primary challenge student-athletes face is their schedules' demanding and often unpredictable nature. Athletic training, travel for competitions, and recovery periods can consume significant time, making it difficult to align with traditional educational programs' rigid structures and schedules. That could lead to student-athletes needing help to attend classes, study sessions, or complete assignments on time.

Additionally, the physical and mental demands of intense athletic training and competition can leave student-athletes with less energy for academic pursuits. The stress associated with maintaining competitive athletic performance and good academic standing can also lead to mental health challenges, including anxiety and burnout.

Cultural and institutional factors also play a part. Universities often emphasize the athletic achievements of these students, sometimes leading to a culture that undervalues their academic pursuits. That can make it challenging for student-athletes to seek and receive the academic support they need (Conde et al. 2023).

Student-athletes face specific challenges in managing their academic and athletic commitments. These challenges include:

— *Time Management*. Balancing the demanding schedules of training, competitions, and classes can be overwhelming for student-athletes. They often have limited time for studying, attending lectures, and completing assignments.
— *Fatigue and Exhaustion*. The physical demands of their sport can leave student-athletes physically exhausted, making it challenging to stay focused and perform well academically.
— *Travel and Missed Classes*. Frequent travel for competitions can result in missed classes, making it challenging to keep up with coursework and stay on track academically.
— *Academic Pressure*. Student-athletes may experience extra academic stress as they are expected to uphold high academic standards to continue their eligibility in their chosen sport.

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- *Limited Social Life*. The demanding schedules of student-athletes often need more time for social activities and building relationships outside their sport.
- *Financial Burden*. Balancing the financial demands of college education and expenses related to their sport can be a significant challenge for student-athletes.
- *Lack of Support*. Some student-athletes may need more support systems to help them navigate their challenges, including academic advisors, tutors, or mentors who understand their unique circumstances.

All these challenges can impact student-athletes overall well-being, academic performance, and athletic success. Therefore, it is crucial to provide them with appropriate resources and support to help them effectively manage their academic and athletic commitments. Artificial Intelligence (AI) offers possibilities to help manage these challenges. AI-based learning platforms can provide flexible and personalized education solutions. These platforms can adapt to the unique schedules of student-athletes, allowing them to learn at their own pace, at any time, and from anywhere. For instance, a student-athlete could study on a bus during a road trip for an away game using an AI-based platform.

AI can also create a personalized curriculum based on each student's learning style, pace, and current understanding of the course material. By identifying a student's strengths and areas for improvement, AI platforms can deliver custom-tailored content and assignments, making learning more efficient.

Moreover, AI-driven data analytics can track and analyze academic and athletic performance, providing insights to help student-athletes, coaches, and academic advisors make informed decisions. For example, predictive analytics could highlight when a student-athlete's academic performance might be at risk due to their athletic commitments, enabling early intervention.

In the realm of athletics, AI can provide innovative training solutions. AI technologies can monitor an athlete's performance, providing real-

time feedback, suggesting personalized training routines, and even predicting injury risks based on the athlete's physical data.

By integrating AI into the dual career pathway of student-athletes, we can create an environment that better supports their unique needs and ambitions, fostering their success in both athletic and academic fields.

University student-athletes face the unique task of balancing a rigorous academic curriculum with demanding athletic training schedules. This balancing act often results in time constraints, unpredictable schedules, and high physical and mental stress levels. Given this reality, there is a critical need for personalized and flexible learning approaches that can accommodate the particular needs of student-athletes.

1. Firstly, personalized learning approaches are essential to ensure that each student-athlete can work at a pace that suits their learning style and complements their athletic commitments. These methods can consider the learner's strengths and weaknesses, enabling them to focus on areas that need improvement rather than following a generic curriculum. That is crucial for student-athletes, whose time is a premium resource. Student-athletes can optimize their learning efficiency by targeting areas that require the most attention.
2. Next, flexibility in learning is vital due to the irregular schedules student-athletes often maintain. They must frequently travel for games and competitions and adhere to intense training regimens, making it challenging to attend traditional classroom sessions consistently. Flexible learning models allow student-athletes to access educational content and resources at any time and location, enabling them to learn when most convenient.

AI-based learning platforms are excellent for providing personalized and flexible learning experiences. They can adapt to each student's learning style, track their progress, and tailor the curriculum. Moreover, they offer the ability to learn at any time and from anywhere, accommodating the unique and often unpredictable schedules of student-athletes.

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Additionally, AI platforms can provide immediate feedback, allowing student-athletes to correct misunderstandings and reinforce learning promptly. This immediate response is often not feasible in a traditional classroom setting but is highly beneficial in maintaining the pace of learning.

By recognizing and addressing the unique challenges faced by student-athletes, universities can employ personalized and flexible learning approaches that accommodate these students' dual commitments. The effective integration of these approaches supports student-athletes in managing their academic and athletic responsibilities and fosters an environment where they can thrive in both arenas.

3. Role of AI in tutoring student-athletes

Artificial Intelligence (AI) can significantly enhance the academic experiences of student-athletes at universities, mainly through its potential to deliver tailored content and unique learning experiences, as we have said above. One of the most impactful applications of AI is in the realm of adaptive learning. Platforms like *DreamBox Learning* and *Knewton employ*[6] AI to analyze students' performance in real-time and modify the curriculum based on their needs. For example, suppose a student-athlete is grappling with calculus. In that case, the system identifies this hurdle and provides additional resources, explanatory content, and practice problems, allowing students to master the challenging topic quickly.

Beyond adaptive learning, the flexibility of AI tutoring systems is another significant advantage. Unlike traditional tutoring that adheres to set schedules, AI-powered platforms such as *Coursera*[7] and *Khan Academy*[8] offer self-paced courses accessible at any time. This round-the-clock availability is vital for student-athletes, whose demanding

6 For further information: https://www.dreambox.com/; https://www.knewton.com/.

7 https://www.coursera.org/.

8 https://www.khanacademy.org/.

athletic training and competition schedules often conflict with traditional educational timeframes. AI's capability to provide instant feedback and assessment is another boon to the learning process. Platforms such as *Turnitin*[9], renowned for their plagiarism-checking capabilities, leverage AI to offer grammar and style suggestions, helping student-athletes refine their writing skills and correct mistakes promptly (Dergaa et al. 2023). Furthermore, the predictive power of AI can be harnessed to anticipate academic performance and potential roadblocks in learning. Analytical platforms like *BrightBytes*[10] can evaluate student data to foresee possible performance issues, enabling early intervention to prevent falling grades.

Finally, when combined with Virtual Reality (VR), AI can offer immersive learning and training experiences. Platforms like *STRIVR*[11] provide VR training experiences used by professional sports teams and corporations, presenting student-athletes with opportunities to practice physical drills and academic concepts in an interactive, engaging environment.

Integrating AI into the tutoring process for student-athletes offers more than just personalized academic content. It also ensures flexibility in learning, prompt feedback, predictive performance analytics, and innovative training methodologies. Embracing these technologies allows universities to provide comprehensive, tailored learning experiences that genuinely accommodate the dual commitments of student-athletes. In higher education, particularly for student-athletes, artificial intelligence (AI) applications like adaptive learning systems and virtual coaching assistants are revolutionizing how these individuals learn and train.

9 https://www.turnitin.com/.

10 https://www.brightbytes.net/.

11 https://www.strivr.com/. The platform enhances learning experiences, merging the boundaries between traditional learning and on-the-job proficiency. Born out of collaboration with Stanford University's pioneering Virtual Human Interaction Lab, Strivr integrates cutting-edge research in cognitive science and human behavior. This scientifically grounded approach empowers the platform to boost employee engagement significantly and fortify knowledge retention, thus ensuring a well-equipped and long-serving workforce.

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Adaptive learning systems, such as *ALEKS*[12], are leveraging the power of AI to provide highly personalized educational experiences. These systems analyze a student's engagement, performance, and learning speed in real-time, adjusting the difficulty level, pace, and even the nature of content based on the student's specific needs. If, for instance, a student-athlete consistently struggles with a topic like organic chemistry, the system identifies this issue. It provides additional resources and practice problems or adjusts how the information is presented to better align with the learner's style.

This level of customization helps student-athletes focus on areas where improvement is needed, allowing them to learn at their own pace without the pressure of keeping up with a one-size-fits-all curriculum. The 24/7 availability of these platforms is also particularly beneficial for student-athletes, whose schedules are often packed with training sessions and competitions. The flexibility offered by adaptive learning systems means that student-athletes can access high-quality, tailored educational content at a time that suits them best, be it early morning or late at night.

On the athletic side, AI-driven virtual coaching assistants, such as *Zone7*[13] or *CoachNow*[14], are changing the landscape of athletic training. These tools collect and analyze extensive performance data, from running speed and heart rate to nutrition and sleep patterns. This comprehensive analysis allows the virtual coaching assistant to provide personalized feedback and training recommendations. For instance, if a swimmer's data indicates a slower stroke rate than usual, the AI assistant might suggest specific drills to improve stroke efficiency or recommend a nutritional adjustment to boost energy levels.

Moreover, some of these AI-driven coaching tools are capable of predictive analytics, which means they can anticipate potential injuries based on the collected data. They might suggest specific preventative measures, such as periods of rest, physiotherapy exercises,

12 The platform can be accessed at the following link: https://www.aleks.com/.
13 https://zone7.ai/.
14 https://coachnow.io/.

or adjustments in training intensity. This functionality is invaluable in helping student-athletes maintain their physical well-being and avoid injuries, which can detrimentally impact their sporting and academic commitments.

AI's application to sports analytics can also benefit team sports. Tools such as *Catapult Sports*[15] offer detailed performance analytics to help coaches devise better game strategies and make data-driven decisions about team lineups.

In summary, AI applications like adaptive learning systems and virtual coaching assistants dramatically improve university student-athletes' educational and athletic experiences. By offering tailored, flexible academic support, and data-driven training insights, these technologies are becoming integral to the holistic development of student-athletes, aiding their dual career paths and helping them excel both in the classroom and their sport.

4. Benefits of AI tutorship in university sports programs

Implementing AI tutorship in university sports programs provides several distinct advantages, significantly improving student-athletes academic performance and athlete development.

Firstly, AI-enhanced tutorship can dramatically improve academic performance. Using AI algorithms, adaptive learning platforms can deliver personalized learning experiences tailored to each student-athlete's needs. These systems can analyze student learning patterns, identify areas of difficulty, and subsequently adjust the teaching approach and content to suit the learner's needs better. This level of personalization allows for more effective learning, thereby enhancing academic performance.

Secondly, AI tutorship can greatly aid athlete development. Virtual coaching assistants and AI-driven analytics tools can monitor

15 https://www.catapult.com/.

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an athlete's performance, providing personalized feedback based on comprehensive data analysis. This data-driven feedback is invaluable for identifying strengths and weaknesses, designing tailored training regimes, and monitoring progress.

Additionally, some AI systems are capable of predictive analytics, which can help anticipate potential injuries based on athlete performance data patterns. This predictive capability enables proactive injury prevention, ensuring student-athletes maintain their physical health and maximize their athletic performance.

On a broader scale, integrating AI into university sports programs can also aid the recruitment process. AI can analyze a vast array of data about potential recruits, from athletic performance metrics to academic achievements, helping coaches make informed, data-driven decisions about recruitment. Using AI in university sports programs can give universities a competitive edge, attract top athletic and academic talent, and encourage a culture of continuous learning and development (Zhou, 2021). Implementing AI tutorship in university sports programs presents significant advantages. It enables a highly personalized, flexible learning experience to enhance academic performance, provides data-driven insights for athlete development, and contributes to an innovative learning and training environment. By harnessing these benefits, universities can effectively support the dual career paths of student-athletes, helping them succeed both in the classroom and on the playing field.

Moreover, to address the specific challenges we have identified in the previous paragraph and faced by student-athletes, universities can leverage artificial intelligence (AI) in the following ways:

- *Flexible Scheduling*: AI-powered scheduling systems can help student-athletes manage their time more efficiently by creating personalized schedules that accommodate their athletic and academic commitments.
- *Communication and Collaboration*: AI technology can facilitate seamless communication and collaboration between different departments, such as coaches, academic advisors,

and professors. That ensures that everyone is on the same page regarding a student-athlete's schedule and academic progress-

- *Mental Health Resources*: AI-powered chatbots and virtual assistants can be implemented to provide mental health support and resources to student-athletes. These AI systems can offer guidance and resources and even detect signs of mental health struggles, prompting appropriate intervention.
- *Financial Assistance*: AI algorithms can analyze financial data and identify potential scholarship opportunities, grants, or financial aid programs that student-athletes may be eligible. That can help alleviate the financial burden and make education more accessible.
- *Raising Faculty Awareness*: AI can provide faculty members with insights into the unique challenges student-athletes face. This awareness can lead to more understanding and support from professors, allowing for flexible deadlines or alternative learning options when necessary.
- *Peer Support Networks*: AI can facilitate the creation of peer support networks designed explicitly for student-athletes. These networks can connect athletes from different sports and provide a platform for sharing experiences, advice, and strategies for academic success.

By implementing these AI-driven strategies, universities can provide the necessary resources and support to help student-athletes effectively manage their academic and athletic commitments, leading to overall success and well-being. This thing explicitly enhances the retention rate of student-athletes at universities. With the ever-increasing demands on universities to provide top-notch services and experiences for their students, AI offers many opportunities to enhance athlete retention and student satisfaction on campus. By leveraging AI-powered solutions, universities can address critical challenges, personalize student experiences, and create a supportive environment that fosters athletic excellence and student success.

One of the most significant advantages of AI in universities is its ability to provide personalized support to athletes and students. For

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student-athletes, AI can aid in identifying areas where they require additional academic and athletic support. For instance, AI-powered tutoring systems can provide customized study plans based on a student's learning style and performance, optimizing their academic progress. Similarly, AI can analyze athletes' training data and recommend personalized workout routines and nutrition plans to improve their athletic performance.

AI excels in predictive analytics, enabling universities to anticipate challenges and intervene proactively. By analyzing historical data, AI models can forecast potential issues that could hinder athlete retention and student satisfaction. These could include academic struggles, social integration problems, or mental health concerns.

When universities employ predictive analytics, they can develop early intervention strategies to support students before problems escalate. For example, suppose AI identifies a student at risk of dropping out due to academic difficulties. In that case, the university's support team can promptly step in and offer additional academic resources or counselling.

Effective communication is paramount in fostering student satisfaction and athlete retention. AI-powered chatbots and virtual assistants can be vital in maintaining constant and immediate communication with students. These AI tools can answer frequently asked questions, guide students to relevant resources, and offer timely reminders about important deadlines or events.

For student-athletes, AI-powered communication channels can facilitate seamless interactions between athletes, coaches, and support staff. This efficient communication can lead to better coordination of training schedules, injury management, and overall team morale.

Universities with robust athletic programs can leverage AI to optimize talent identification and development processes. AI algorithms can analyze performance data, match it with specific athletic requirements, and precisely identify promising athletes. This data-driven approach reduces bias and ensures that talented individuals are noticed.

Additionally, AI can assist in creating tailored training plans based on an athlete's strengths and weaknesses. Through continuous analysis, AI can tailor training routines to maximize performance and minimize the potential for injuries.

AI-powered VR and AR technologies open exciting athlete training and skill development possibilities. By simulating real-game scenarios, these immersive experiences can help athletes refine their techniques, decision-making abilities, and situational awareness. That enhances athletic performance and contributes to heightened satisfaction and engagement among student-athletes.

As AI advances, its potential to enhance athlete retention and student satisfaction in universities becomes increasingly evident. By providing personalized support, leveraging predictive analytics, facilitating communication, and utilizing cutting-edge technologies, universities can create an environment where student-athletes thrive academically, athletically, and personally. Embracing AI in higher education is a forward-thinking approach and a strategic investment in the success and satisfaction of athletes and students. As universities integrate AI-driven solutions into their campuses, they position themselves at the forefront of innovation, ensuring a brighter future for their students and athletes.

5. Ethical considerations and limitations

Integrating AI in university tutorship for student-athletes presents promising opportunities to enhance learning and athletic performance. However, this advancement also raises significant ethical concerns that must be addressed to ensure a fair, safe, and inclusive educational environment (Kasneci et al., 2023). The ethical implications of using AI in tutoring student-athletes, focusing on data privacy and the potential for algorithmic biases, are essential. By recognizing these concerns and implementing ethical guidelines, universities can maximize AI's benefits while safeguarding their student-athletes well-being and rights.

AI tutorship heavily relies on collecting and analyzing vast amounts of data, including academic records, training performance, and

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personal information about student-athletes. This data is essential for providing personalized support and identifying areas of improvement. However, handling sensitive information requires careful consideration of data privacy and security.

Universities must prioritize protecting student-athletes data through robust encryption, secure storage, and limited access rights. Additionally, explicit consent must be obtained from each student-athlete before collecting their data, and they should be fully informed about how their information will be used. Furthermore, anonymization techniques should be applied whenever possible to minimize the risk of data breaches or unauthorized access.

AI algorithms used in tutorship can be complex and challenging to understand for non-experts, including student-athletes. The opaqueness in the decision-making process of AI could result in diminished trust and could put specific individuals at a disadvantage. Universities must prioritize explainable AI models, ensuring students and coaches can comprehend the reasoning behind AI-driven recommendations and decisions.

Transparency should extend beyond the algorithms themselves. Students and athletes should be aware of the factors and data sources used to assess their progress, areas of improvement, and performance predictions. Clear communication about the role of AI in their educational journey is essential to foster trust and ensure that student-athletes remain in control of their learning experience (Shaw at al., 2023).

AI algorithms are not immune to biases and may perpetuate and even exacerbate existing inequalities. In the context of AI tutorship for student-athletes, biases may manifest in various ways, such as favouring specific sports disciplines, demographics, or learning styles. Algorithmic biases could lead to unequal student-athlete opportunities and reinforce stereotypes or discrimination. To mitigate biases, universities must ensure diverse and inclusive data sets are used in AI model development. Frequent assessments ought to be conducted to evaluate the algorithms' fairness and efficiency across various groups of student-athletes. If

biases are identified, universities should take proactive steps to rectify them and recalibrate the AI models to ensure equitable support for all.

While AI can provide valuable insights and support, it should never replace human oversight and intervention. Human mentors, coaches, and educators play critical roles in student-athletes development, providing emotional support, motivation, and moral guidance that AI cannot replicate. Universities should balance AI-driven tutorship and human interaction, ensuring students can access human mentors who can interpret AI recommendations and provide holistic support. This collaborative approach helps prevent overreliance on AI and ensures that students' emotional and social needs are adequately addressed.

AI tutorship holds immense potential for transforming the educational experience of student-athletes at universities. However, the ethical considerations surrounding data privacy, algorithmic biases, transparency, and human oversight are of paramount importance. By prioritizing students' data privacy, fostering transparency in AI decision-making, addressing biases, and maintaining human intervention, universities can harness the power of AI responsibly and ethically. Integrating AI into tutorship while upholding ethical principles will create an environment where student-athletes thrive academically, athletically, and ethically.

As universities embrace AI in tutorship for student-athletes, it is essential to acknowledge the limitations and challenges of this technological advancement. While AI offers numerous benefits, there are areas where human interaction remains crucial, and resistance to technology adoption may arise among student-athletes and universities. Building rapport, empathy, and trust are essential to mentorship and coaching, which are best achieved through face-to-face communication (Passmore & Tee, 2023).

Student-athletes often seek guidance beyond academic and athletic challenges, and human mentors can provide emotional support and motivation that AI may not fully grasp. Universities must recognize the vital role of human mentors and coaches in fostering a sense of belonging and community among student-athletes. Integrating AI

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should complement, not replace, human interaction to ensure a well-rounded educational journey.

Resistance to technology adoption is not uncommon, and it can present a challenge when introducing AI tutorship to universities and student-athletes. Some individuals may fear job displacement or perceive AI as threatening traditional teaching methods. This resistance could stem from a lack of understanding, misinformation, or concerns about algorithmic biases. To overcome resistance, universities must prioritize clear and effective communication about the purpose and benefits of AI tutorship. Transparent discussions with student-athletes and educators can address misconceptions and clarify how AI is a supportive tool rather than a replacement for human mentors.

AI algorithms work based on data analysis, and while they strive to provide personalized support, they might need to fully account for the nuances of individual preferences and learning styles. Some student-athletes may respond better to different teaching methodologies, which AI may not continuously adapt to effectively. To mitigate algorithmic biases, universities should regularly audit AI systems and actively involve diverse teams in their development. Ethical oversight and transparency in AI decision-making can ensure that the technology is used responsibly and equitably. Human interaction remains invaluable in providing emotional support and mentorship, and resistance to technology adoption may require proactive communication and education. Moreover, customizing AI experiences and addressing algorithmic biases are essential to ensuring that AI-driven support is tailored, fair, and inclusive. By acknowledging these limitations and challenges, universities can navigate the integration of AI effectively and create a harmonious balance between technology and human engagement, ultimately enhancing the educational journey of student-athletes. Acknowledge limitations and challenges associated with AI, such as the need for human interaction and potential resistance to technology adoption.

6. Future prospects and conclusion

We are convinced that future successful developments of artificial intelligence in tutoring student-athletes at university can be outlined in these key points:

1. AI tutorship will be able to devise personalized learning paths that will be tailored to each student-athlete's academic and athletic schedules, strengths, and weaknesses, allowing them to balance their responsibilities more effectively.
2. Adaptive content delivery will ensure the presentation of educational materials in formats preferred by student-athletes, optimizing their future learning experiences and knowledge retention.
3. Real-time performance tracking, utilizing wearable devices and data analytics, will be able to monitor student-athletes' physical and mental well-being and academic progress, enabling targeted support and adjustments.
4. AI tutorship will address skill development needs by analyzing sports performance data and providing personalized training plans and drills, complementing academic schedules.
5. Virtual reality and simulation-based training will offer immersive and safe practice environments, allowing student-athletes to refine decision-making skills and improve performance.
6. The integration of AI in student-athlete training will become paramount to fostering academic and athletic success. Student-athletes will face unique challenges in managing their time between sports commitments and academic responsibilities. AI tutorship systems will address these challenges by providing personalized learning paths and adaptive content delivery, allowing student-athletes to juggle both pursuits efficiently.
7. Real-time performance tracking will enable a holistic approach to student-athlete development, promoting overall well-being and facilitating timely support. AI tutorship will devise targeted skill development plans by analyzing sports performance data. This will allow student-athletes to excel in their sport without hindering their academic advancement.

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8. The integration of virtual reality and simulation-based training will revolutionize student-athletes' preparation, offering risk-free and realistic scenarios for honing athletic skills and decision-making abilities. By leveraging these technologies, student-athletes will be able to achieve optimal performance while enriching their educational journey.

In conclusion, AI tutorship holds immense potential to transform university student-athletes academic and athletic experiences. Personalized learning paths, adaptive content delivery, real-time performance tracking, personalized skill development, and virtual reality training are pivotal in maximizing student-athletes potential.

By integrating more and more AI into student-athlete training, universities will foster an environment that nurtures academic excellence and athletic prowess. As this technology continues to evolve, universities should embrace AI tutorship to empower student-athletes with the tools they need to thrive both in their chosen sport and within the academic realm. Ultimately, the marriage of AI and student-athlete training will pave the way for a new era of success, ensuring that student-athletes can reach their full potential and make lasting contributions in their chosen fields.

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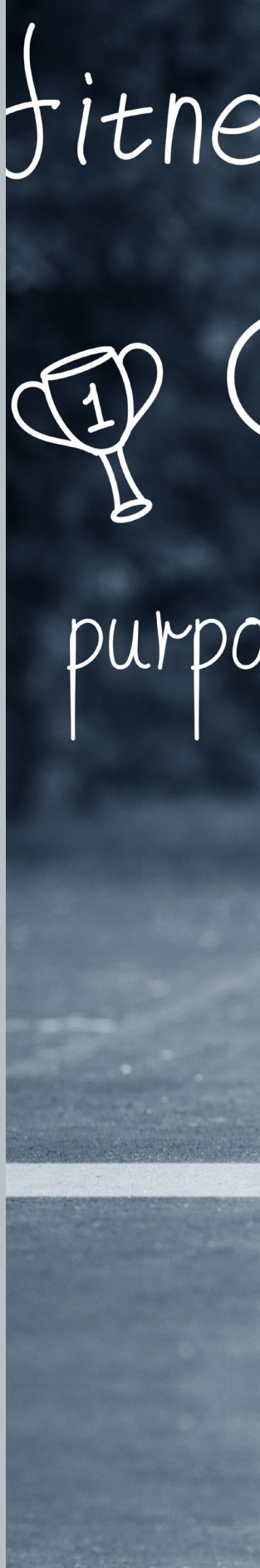
Since the European Year of Education through Sport (EYES, 2004), sport has been recognised as an important cultural, social and economic phenomenon in the European Union, fully recognising the right of sportspeople (e.g. athletes, coaches, referees, sport managers and volunteers) to combine their academic/work and sport careers (e.g. dual career). This book is intended to raise awareness among sport institutions and organisations of the need to cooperate to overcome problems related to the combination of education/work and competitive sport, to promote awareness of the need to develop dual career paths, and to foster exchanges of best practices at local, regional, national and European level. It gathers research, projects and practical experiences from an academic approach that will serve as an updated reference to the different skateholders involved in the Dual Career.



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