

Economic development and education: Exploring the dynamic relationship between education and employability in the sports sector

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Abstract

This article explores the relationship between higher sports education and employability through the framework of human capital development based on theories of human, social, and cultural capital. Using a narrative review methodology, the study synthesizes interdisciplinary research from economics, education policy, and sports science to examine how education facilitates labor market integration within the context of economic development. The analysis focuses on four thematic areas: (a) the contribution of higher sports education to employability, (b) the role of dual careers and lifelong learning in enhancing human capital value, (c) entrepreneurship as a driver of innovation, and (d) the influence of educational policy and institutional strategies on professional integration. The study highlights how sports education fosters both technical and transferable skills, enhancing adaptability, productivity and economic performance. A SWOT analysis identifies internal strengths and weaknesses of educational systems and external opportunities and threats from labour market trends and technological advancements. The findings underscore the necessity of aligning curricula with labour market needs, supporting dual career paths and integrating entrepreneurship into academic programs. Strategic policy proposals include fostering collaboration among educational institutions, sports organizations and industry stakeholders to better prepare graduates for a competitive labour market. Additionally, the article emphasizes the need for institutional reforms that promote innovation and interdisciplinary in sports education. Future research should explore the economic outcomes of sports education programs, the impact of investments in sports infrastructure and the role of higher education in emerging areas such as esports and sports technology. Overall, sports education is positioned as a strategic tool for both personal development and economic growth.

Key words: Economic development, Sports education, Employability, Human Capital, Dual Career, Lifelong Learning.

Introduction:

The relationship between education and employability constitutes a multifaceted issue that has garnered significant scholarly interest, as education is considered a key mechanism for investing in human capital. According to (Papakonstantinou, 2003), since the 1950s, education has been recognized as one of the most important drivers of economic growth and professional integration, as higher levels of education are associated with increased opportunities in the labour market and higher financial returns. From an economic perspective, education is regarded as an investment, as it contributes to the improvement of individuals' skills and knowledge, thereby enhancing their professional prospects. As Papakonstantinou (2003) also notes, the primary criterion for pursuing further studies is linked to the return on this investment, both at the individual and societal levels. Education entails the systematic process through which individuals acquire knowledge, skills, values, and competencies, and it is categorized into primary, secondary, and tertiary levels. Moreover, "while compulsory education is both a right and an obligation of citizens, studies beyond lower secondary school are a matter of personal choice" (Papakonstantinou, 2003, p. 33). Additionally, according to Kanellopoulos *et al.* (2004), education benefits not only the individual but also their work and social environment, as a higher level of education attained by an employee can enhance the productivity of their colleagues, especially in collaborative work settings. Consequently, the level of education is considered a determining factor for labour market competitiveness, increased productivity, and the strengthening of economic potential. For this reason, many countries implement educational policies aimed both at improving human capital and at achieving broader economic objectives.

At this point, it is essential to also examine the concept of employment, which, as a state of paid work or systematic professional activity (Babiniotis, 2002), constitutes a fundamental variable for the analysis of economic stability and personal development. Within the context of the global knowledge economy, education, employment, and economic development are inextricably linked. Consequently, higher education plays a pivotal role in producing graduates as human capital, whose value lies in enhancing productivity for economic benefit

(Somerville, 2020, p. 189). However, the transition from education to employment is not always linear, as graduates often face barriers that go beyond their level of education (Somerville, 2020).

As technological advancements accelerate and market needs continuously evolve, the development of flexible educational programs becomes imperative - programs capable of responding effectively to emerging challenges. Among these are those stemming from the convergence of the media and technology industries, a phenomenon that, on the one hand leads to job displacement and structural transformation, and on the other, creates new, innovative professional opportunities (Somerville, 2020). In response to this new reality, higher education institutions are now called upon to reconsider their curricula by integrating skills that foster adaptability, innovation, and lifelong learning.

This conceptual link is further grounded in Human Capital Theory (Becker, 1993), which was developed in the 1950s and 1960s by economists Schultz (1961) and Becker (1993). It is defined as “a set of skills that enhance a worker’s productivity and are derived from education, such as formal schooling and training” (Leoni, 2023, p. 227). According to this theory, individuals, rather than focusing on physical capital - such as machinery or factories - can invest in themselves in ways that increase their productivity and economic value, thus functioning as a form of capital. Schultz (1961) broadened this framework by incorporating the concept of cost and emphasizing the importance of both direct and indirect expenditures, such as foregone earnings and time (World Bank, 2016). Empirical research supports the positive relationship between education and higher income, innovation and national productivity (Filiz, 2019; Rothmi & Rafid, 2023). In the field of sports education, this relationship becomes more complex due to the growing demand for practical skills, innovative thinking, and adaptability (Helyer, 2017). Education in sport, whether it is for athletes, coaches or sport managers, is not limited to physical training but is embedded in structured academic programs that serve both individual career advancement and the institutional competitiveness of sports organisations (Papailiou, 2015). Furthermore, education contributes to innovation in sports marketing, technology and human resource management (Sarlis, 2024), reinforcing the role of sports as a sector with significant economic impact and added value. Beyond Human Capital Theory, alternative frameworks such as Bourdieu’s (1986) concepts of social and cultural capital offer a more holistic perspective. These concepts argue that access to opportunity is also shaped by one’s social networks and cultural awareness (Chiang *et al.*, 2020). From this perspective, success in the labour market and particularly in the sports sector, is not determined by education alone. Social capital, such as connections with coaches, sponsors or institutional stakeholders plays a decisive role in professional advancement (De Coninck & Van Bavel, 2023), while cultural competence and international adaptability offer competitive advantages, especially for athletes transitioning into globalised work environments (Harris *et al.*, 2022; Lee *et al.*, 2021). As technological advancements accelerate and market needs continuously evolve, the development of flexible educational programs which can respond effectively to emerging challenges, becomes imperative. Among these, are those stemming from the convergence of the media and technology industries, a phenomenon that on the one hand, leads to job displacement and structural transformation, and on the other, creates new innovative opportunities (Somerville, 2020; World Bank, 2016). In response to this new reality, higher education institutions are now called upon to reconsider their curricula by integrating skills that foster adaptability, innovation and lifelong learning.

This line of inquiry does not pertain solely to traditional economic sectors but also extends to the field of sports, which in recent years has evolved into a significant economic pillar. According to Hammerschmidt *et al.* (2024), higher education is no longer viewed merely as a means of personal development but as a strategic investment in human capital that is essential for sustaining innovation within the sports economy. The practical implementation of this perspective is reflected in the fact that education in the sports sector yields tangible outcomes by enhancing employability, economic performance, and entrepreneurial innovation and creativity. This underscores the decisive role of educational policy in shaping the sports ecosystem.

Educational investment in the field of sports translates into professional opportunities that span a wide range of sectors within the broader sports economy ecosystem. Consequently, employability in the sports sector is not confined to competitive athletic performance. It encompasses fields such as sports management, physical education, sports science, marketing, psychology, journalism, and sports tourism. These diverse professional pathways highlight the necessity of investing in human capital in sport, whether through university-level programs or vocational training and lifelong learning. This trend is further reinforced by the continuous expansion of the sports economy, which includes the production of goods and services, both public and private investments, and the organization of major events—factors that collectively intensify the demand for specialized human resources.

The significance of these developments is also reflected in official statistical data. According to Eurostat (2024), the employment rate of young people in the sports sector within the European Union exceeds the general average, confirming the sector's strong potential for professional integration. Moreover, higher education institutions that incorporate innovation and entrepreneurship into their curricula play a pivotal role in preparing adaptable graduates (Hammerschmidt *et al.*, 2024). This adaptability is further reinforced by educational strategies that combine academic learning with practical training.

To further enhance flexibility and professional integration, approaches such as dual careers, lifelong learning, and the promotion of entrepreneurship are emerging as key mechanisms for the development of human

capital in the field of sport. Lifelong learning supports the continuous acquisition and development of skills (Bulbul, 2020; Kaya, 2020), while the integration of entrepreneurship into academic curricula fosters innovation and increases employability prospects (Matic *et al.*, 2022; Ratten & Jones, 2018).

However, the contribution of these strategies has not been sufficiently analysed through the lens of human capital theory. Nonetheless, certain empirical studies provide valuable insights into the relationship between entrepreneurship, skills, and employability. Ertekin (2021) reports a positive correlation between entrepreneurship and innovative skills among students in physical education departments, while Jin (2022) highlights the importance of entrepreneurial education in bridging education and employability. At the same time, dual career programs have been identified as a critical tool for professional reintegration after an athletic career (Debois *et al.*, 2015; Metelski, 2022; Robnik *et al.*, 2022), strengthening adaptability and self-management skills (Tekavc *et al.*, 2015), as well as fostering a broader set of soft skills that are essential for the transition to the labour market (Vidal-Vilaplana *et al.*, 2024).

The integration of policies and educational reforms within the sports sector is recognized as a fundamental prerequisite for the development of a sustainable model of education and employability. The formulation of educational policy that facilitates the transition from athletic participation to professional life is closely linked to social inclusion and economic development (Mumcu *et al.*, 2019). Moreover, support structures such as mentoring programs and institutional dual career frameworks serve as illustrative examples of best practices for promoting professional reintegration (Fuchs *et al.*, 2021; Harrison *et al.*, 2022).

In summary, the dynamic relationship between sports education and employability spans from the individual trajectories of athletes to the strategic policies adopted by sports and educational institutions. Emphasizing dual careers, lifelong learning, and entrepreneurship are a critical factor in optimizing human resources within the sports sector and enhancing its contribution to economic development and social inclusion (Kaya, 2020; Matic *et al.*, 2022; Metelski, 2022; Ratten & Jones, 2018; Robnik *et al.*, 2022; Tekavc *et al.*, 2015; Vidal-Vilaplana *et al.*, 2024).

The above findings underscore that understanding this relationship requires a multifactorial approach that incorporates social, economic, and institutional variables. This review aims to compile and highlight, through a narrative review, the key research approaches that illuminate the interconnection between educational strategies and professional absorption in contemporary sport. Specifically, it focuses on the contribution of higher education, lifelong learning, entrepreneurship, and dual careers, analysing how these strategies can respond to the demands of an ever-evolving labour market. Within this framework, the sports sector will also be examined as a field of convergence among education, employment, and economic activity, with the objective of showcasing the role of “sport economy” in the formulation of developmental policies.

According to its aim, this study seeks to address several key research questions. Firstly, how does higher sports education contribute to enhancing the employability and productivity of graduates in the sports sector? Secondly, what is the role of dual careers and lifelong learning in maximizing the economic return of human capital in the field of sport? Furthermore, how does the integration of entrepreneurship into sports education influence innovation and the competitiveness of the sports industry? Finally, which educational and institutional strategies can strengthen the link between higher education and economic development in the sports sector?

Materials and Methods

This article adopts the methodological approach of a narrative review, which allows for a synthetic analysis and interpretation of concepts derived from diverse academic disciplines, reflecting the interdisciplinary nature of the subject matter. The selection of this methodology was deemed appropriate, as the investigation of the relationship between higher sports education and employability cannot be approached unidimensionally. Instead, it requires the integration of theories and research from economics, educational policy, sports science, and sociology. Unlike systematic reviews, the narrative approach offers flexibility and depth, emphasizing the meaning-making of complex concepts such as human, social, and cultural capital; dual career pathways; lifelong learning; entrepreneurship in sport; and employability as a socio-economic and professional outcome. This methodology is grounded in the comparative analysis of theoretical frameworks and empirical findings drawn from international scholarly literature, utilizing articles and studies from reputable academic databases.

PRISMA Protocol and Data Collection

Although this narrative review does not strictly follow the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines, it is based on a structured and systematic process of literature search and selection to ensure transparency and reproducibility in the data collection and analysis. The literature search was conducted using major scientific databases such as Scopus, Google Scholar, Elsevier, ERIC, among others, employing thematic search terms that reflect the interdisciplinary nature of the topic. The search terms included combinations of keywords such as sport education, employability, human capital in sports, dual career, entrepreneurship in sports, lifelong learning in sports, sports labour market, sport policy, athlete transition.

The inclusion criteria focused on studies examining the relationship between higher sports education and employability, with an emphasis on the development of human capital, professional integration, innovation in sport, and institutional educational policy strategies. Additionally, studies analysing the social, economic, and educational parameters that shape the sports labour market were included. Both Greek and international scholarly articles were considered to broaden the scope of sources and avoid linguistic bias. Although no strict time constraints were applied, the search primarily targeted studies published within the last decade (2015–2025) to capture recent developments in the field. Conversely, sources that were based on one-dimensional or linear conceptions of education and the labour market, or lacked a sufficient theoretical foundation related to human capital, were excluded to ensure alignment with the interdisciplinary framework of the present article.

Literature Selection Process

The initial search identified a wide range of studies across various academic fields, including sports education, sports economics, sociology, management, and educational policy. The selection process followed a multi-layered and focused approach:

- Preliminary relevance screening: Article titles and abstracts were reviewed to assess their relevance to the theoretical framework of the present review.
- Full-text review: Articles that passed the initial screening underwent in-depth analysis to ensure that they addressed at least one of the core themes of this review within the context of sports education and the sports economy.
- Categorization and thematic analysis: The selected articles were categorized based on their primary focus (e.g., educational programs, employability strategies, innovation, entrepreneurship, institutional interventions) and analysed for common patterns, theoretical divergences, and practical applications.

This process enabled the identification of studies that contribute to the development of a synthetic framework for understanding the relationship between sports education and employability. To enhance the validity and reliability of the findings, source triangulation was applied to confirm the theoretical soundness of the key concepts.

Conceptual Framework

The conceptual framework of this review is grounded in the theories of human, social, and cultural capital as articulated by Schultz (1961), Becker (1993) and Bourdieu (1986), and further developed in contemporary literature. The central aim of the framework is to highlight how concepts such as educational investment, returns on learning, social networks, and human capital are linked to employability and professional performance in the sports sector. Simultaneously, the analytical framework incorporates theoretical contributions from the fields of educational policy, innovation in sports entrepreneurship and labour market studies, to examine how human resources in sport can be strategically mobilized for economic development and social inclusion. This approach enables a layered analysis of the interdependencies between education and professional career trajectories.

To synthesize the key insights derived from the narrative review, this study also applies a SWOT analysis framework. The purpose of this strategic tool is to map and evaluate the internal and external factors that influence the relationship between higher sports education, human capital development and employability. The SWOT model is informed by the findings of the narrative review and aims to provide a clear and concise overview of the critical areas that require policy attention or strategic investment. While not a standalone methodological approach, it serves as a complementary analytical framework within the broader structure of the narrative review.

Methodological Reliability and Rigor

To ensure scientific reliability and rigor, this review followed established best practices in research documentation:

- Transparency: The processes of search, selection, and categorization of sources were fully documented to guarantee reproducibility and clear traceability of the research steps.
- Thematic and temporal relevance: The review was based primarily on recent studies that examine in depth the concepts of employability, human capital, lifelong learning, and entrepreneurship in sport, within the context of current socio-economic conditions. Although the review does not include an extensive analysis of the original theoretical foundations, the key concepts are highlighted through the recent literature, which redefines their significance within the modern framework of the sports economy and education.

Results

This narrative review highlighted four key thematic areas that reflect the complex and interdisciplinary relationship between higher sport education, employability and the strategic utilization of human capital. The findings are organised around the theoretical principles of human, social and cultural capital and focus on (a) the contribution of higher sport education to employability, (b) the importance of dual careers and lifelong learning

in enhancing the economic value of human capital in the sport sector, (c) entrepreneurship as a driver of innovation in sport, and (d) the role of educational policy and institutional strategies as catalytic factors for reform and development. These four areas are not examined in isolation, but as interacting elements of a complex socio-economic system, that positions sport as a productive sector of the knowledge economy, linking education, professional development and economic value.

The Contribution of Higher Sports Education to Employability and the Strategic Enhancement of Human Capital

Higher sports education constitutes a key factor in the strategic enhancement of human capital, as it combines the development of specialized athletic skills with the systematic cultivation of transferable competencies that directly improve employability. This dual focus—beyond enhancing individual athletic performance—fosters essential soft skills such as teamwork, discipline, adaptability, and leadership. The transition from athletic participation to professional career requires an expanded employability framework that goes beyond the boundaries of traditional sports education. Accordingly, higher sports education prepares graduates to meet the multidimensional demands of the labour market by integrating practical experience, reflective learning, and direct industry engagement into curricula. According to Dinning (2017) and Burnett and Taylor (2023), graduates of sports programs acquire marketable skills that extend beyond the competitive arena, including communication, problem-solving, and critical thinking.

Enhancing graduate employability is a core strategy of educational reforms at the European level, as demonstrated by the “Bologna Process” and the “Europe 2020” strategy, both of which aim to align graduate skills with labour market demands (Pereira *et al.*, 2019). Within this framework, the need to strengthen employability is particularly pressing in the field of sports education. As reported by Baker *et al.* (2017), despite variations in perceptions between employers and graduates regarding the importance and possession of specific skills, personal, interpersonal, and professional competencies are widely recognized as essential for successful integration into the labour market.

Moreover, internships and volunteering activities embedded in modern curricula promote and ensure that the emerging human capital is strong, competitive, adaptable, and aligned with current market standards (Şahin, 2023). At the same time, the implementation of graduate tracking and assessment systems allows universities and educational policymakers to identify and address gaps between educational provision and labour market demand (Pereira *et al.*, 2019).

The strategic development of human capital in higher sports education is further reinforced through initiatives such as the project “Sport4E – Skills through Sport for Employability and Entrepreneurship”, which leverages sport as a vehicle for developing professional and entrepreneurial skills (Martins *et al.*, 2023). Similar programs, which go beyond technical training to cultivate leadership, problem-solving, and entrepreneurial competencies, position higher sports education as a platform for the strategic advancement of human capital and professional growth (Santanski, 2023). Consequently, the resulting synergy among sport, education, and employability is both intentional and transformative (Martins *et al.*, 2023; Şahin, 2023).

Within the broader sports ecosystem, employment needs extend beyond athletes to include physiotherapists, coaches, sports analysts, administrative professionals, nutrition specialists, as well as marketing experts and sports event organizers. The availability of specialized training programs—such as Coaching Schools, Departments of Physical Education and Sport Science (DPES), and academic courses in sports tourism or sports management—enhances graduates’ professional prospects by creating a wide range of employment opportunities in a continuously expanding sport-economic sector. Furthermore, the rapid pace of technological advancements in the field of sport (e.g., wearables, data analytics, esports) necessitates the integration of new skills into academic curricula (Martins *et al.*, 2023; Şahin, 2023). At the same time, the connection between theoretical and practical education through participation in sports events has been shown to strengthen both social capital and the practical competencies required by today’s employers (Santanski, 2023; Skoblikova *et al.*, 2025).

The intersection between sports education and employability is also characterized by the development of networks that foster collaborative learning and mentorship. These networks increase an individual’s social capital and consequently enhance their professional prospects by expanding their occupational circles (Oliveira *et al.*, 2024; Santanski, 2023). Such practices provide a stable foundation for addressing labour market challenges, enabling graduates to leverage community support during transitional phases in their careers (Oliveira *et al.*, 2024). Therefore, cultivating social capital through sport is a critical component of the human capital strategy in higher education (Oliveira *et al.*, 2024; Santanski, 2023).

In conclusion, higher sports education significantly contributes to the enhancement of human capital, as it equips graduates with a balanced skill set that combines specialized athletic expertise with core employability competencies. This holistic approach fosters individual professional development while supporting broader socio-economic objectives, contributing to the formation of a flexible and resilient workforce capable of driving innovation and growth in an increasingly competitive global economy (Dinning, 2017; Harris-Reeves, 2023; Laura Mamuli, 2020; Tsitskari *et al.*, 2017).

Dual Career and Lifelong Learning: Strategies for Enhancing the Economic Value of Human Capital in the Sports Sector

The concept of dual career constitutes a key strategy for ensuring the smooth transition of athletes from competitive sport to new professional domains, through an integrated approach that combines athletic engagement with academic or vocational development (Condello *et al.*, 2019; Martinsone, 2024). Essentially, the notion of dual career refers to the parallel development of both athletic and professional or educational trajectories, aiming to secure employability during and after an athlete's sporting career. European programs such as *EU Athletes* and *More than Gold* represent successful implementations of the dual career model. According to Martinsone (2024) and Condello *et al.* (2019), the *EU Athletes* program focuses on bridging sport with education and training, strengthening athletes' adaptability to labour market demands. At the same time, *More than Gold* offers personalized guidance, educational seminars, and psychological support, highlighting the importance of a holistic approach to supporting athletes (Abelkals *et al.*, 2021).

A critical component of the aforementioned programs is the systematic development of both soft and technical skills. Soft skills include communication, teamwork, leadership, and time management, while technical skills relate to specialized knowledge in sport and the application of technologies such as wearables, performance analytics systems, and sport management tools (Martinsone, 2024). International examples, particularly from European countries, confirm that policies supporting dual careers are associated with higher employability rates and better adaptation of former athletes to new professional environments (Baker *et al.*, 2017; Pereira *et al.*, 2019). A key enabling factor in these strategies is the implementation of mentoring programs, which provide personalized support, guidance on career objectives, and reinforcement of athletes' self-confidence, thereby facilitating their transition into other professional domains (Condello *et al.*, 2019).

The concept of lifelong learning constitutes an equally fundamental strategy for enhancing the economic return of human capital in sport. Coaches, athletes, and executives of sports organizations are continuously required to update their knowledge on scientific advancements, technological innovations, evolving regulatory frameworks, and new approaches to leadership and management. Continuous education is no longer an option but a necessary condition not only for professional development but also for professional survival. Participation in seminars, training programs organized by national and international bodies, and certifications, such as those offered by UEFA, the IOC, or national federations, contribute to knowledge renewal and broaden long-term career prospects.

Lifelong learning extends beyond formal education to include non-formal and informal forms of training. The study by Corrales-Herrero & Rodríguez-Prado (2018, p. 1) examined various modalities of non-formal lifelong learning, such as seminars, training courses, and other initiatives, and highlighted that their effectiveness depends both on the phase of the economy and the employment status of the individual. Specifically, during periods of economic recession, lifelong learning proves especially beneficial for unemployed individuals, facilitating their reintegration into the labour market, while during periods of economic growth, it enhances career advancement opportunities for those already employed. Consequently, the challenges of the modern labour market drive the adoption of a lifelong learning mindset as an integral component of strategy in the field of sports economy and education.

In the field of sport, this ongoing need for learning is directly linked to the rapid pace of environmental change, from evolving regulations and training technologies to strategies for engaging fan communities and the use of social media. Especially in managerial roles, such as marketing managers of sports clubs, event directors, or sponsorship coordinators, lifelong learning is not merely an option but a fundamental prerequisite for professional advancement within an increasingly competitive and ever-changing sector.

At the same time, the combined implementation of dual career and lifelong learning strategies plays a crucial role in fostering the economic resilience of athletes. As emphasized by Guidotti *et al.* (2015) and López-Flores *et al.* (2021), the development of non-sport-related skills and the acquisition of alternative professional competencies significantly reduce the risks associated with the relatively short duration of athletic careers. Continuous learning and investment in new knowledge enable athletes to transition smoothly into second careers, maximizing the return on their human capital.

Moreover, the synergy between dual career and lifelong learning enhances collective socio-economic performance. The active engagement of athletes in ongoing learning experiences - both during and after their athletic careers - contributes to the formation of a knowledge-based environment. The continuous development of skills improves both individual and societal outcomes (Drewery *et al.*, 2020), promoting resilience and adaptability within the context of the sports economy. This contribution becomes particularly significant in today's knowledge society, where the creation, dissemination, and application of knowledge are key drivers of economic development and competitiveness, since "knowledge is a measurable product, and therefore, competitive" (Tiligada, 2022, p.10).

In summary, the role of dual career and lifelong learning in sport is multifaceted and strategically significant. Their combination offers a robust framework for the continuous development of human capital that transcends the boundaries of athletic identity. By cultivating a wide range of skills, athletes enhance both their individual competitive advantage, since knowledge is an investment, and their long-term economic development, since that investment yields high returns. These integrated strategies are not limited to strengthening individual career paths but also make a substantial contribution to the overall economic development and social well-being of the sports ecosystem (Corrales-Herrero & Rodríguez-Prado, 2018).

Entrepreneurship as a Driving Force of Innovation in Sport

Entrepreneurship has emerged as a critical driver of innovation within the sports ecosystem, promoting the creation of new value, enhancing competitiveness, and stimulating economic growth. This convergence of entrepreneurship and innovation has been widely recognized as a transformative force in sport governance and policy, as documented in recent studies (Hammerschmidt *et al.*, 2022, 2024). The integration of entrepreneurial thinking within sports organizations fosters the development of innovative products, services, and processes, challenging traditional operational models and encouraging risk-taking and creative problem-solving (Nová, 2015; Ratten & Ferreira, 2017).

Empirical research indicates that sport entrepreneurship fosters a dynamic environment where innovation becomes both a strategic advantage and a direct outcome of entrepreneurial initiatives. Hammerschmidt *et al.* (2022) argue that creativity and innovation are essential for sports organizations to remain competitive in an increasingly globalized market. Nová (2015) highlights that the distinctive characteristics of the sports sector—such as fan engagement, performance dynamics, and brand identity—create unique innovation opportunities that require specialized entrepreneurial approaches. Similarly, Pouder (2019) emphasizes that the interaction between entrepreneurship and innovation reinforces the development of innovative policies in sport and transforms management practices through adaptation to new technologies and business models.

Research in this field highlights the importance of systemic approaches in leveraging entrepreneurial innovation. González-Serrano *et al.* (2020), through a bibliometric analysis, documented the rapid increase in scholarly interest in sport entrepreneurship, emphasizing that long-term value creation in the sports sector relies not only on innovation but also on social responsibility. At the same time, Lara-Bocanegra *et al.* (2022) stress that intrapreneurship - that is, innovation developed within existing organizations - constitutes a significant mechanism for strengthening the entrepreneurial ecosystem in sport, as it introduces more flexible management practices that are better aligned with market demands.

A comprehensive synthesis of the field reveals that entrepreneurship is not merely about launching new ventures but rather constitutes a broader strategic process that involves opportunity recognition, resource mobilization, and value co-creation (Hammerschmidt *et al.*, 2022; Ratten & Ferreira, 2017). This expanded perspective is critical for understanding how sports organizations leverage entrepreneurial strategies to drive innovation. By fostering a culture that encourages experimentation and embraces change, sports institutions can respond effectively to technological advancements and emerging trends, thereby maintaining their relevance and strengthening their competitive advantage (Hammerschmidt *et al.*, 2024; Pounder, 2019).

In summary, entrepreneurship acts as a catalyst for innovation in sport by fostering a culture of creativity and enabling sports organizations to seize emerging opportunities within the sector. The convergence of entrepreneurial dynamism and innovative practices in sport is revealed both as a driver of growth and as a force reshaping the regulatory and operational frameworks of the industry, ensuring its continued evolution amid global challenges (González-Serrano *et al.*, 2020; Nová, 2015). This evolving landscape calls for further research into the mechanisms through which entrepreneurial activities are translated into innovative outcomes, ultimately contributing to a more resilient and dynamic sports ecosystem (Lara-Bocanegra *et al.*, 2022; Ratten & Ferreira, 2017).

Educational Policy and Institutional Development Strategies in the Sports Sector

The effective linkage between education and economic development, particularly in the sports sector, requires the creation of high-performing human resources and the assurance that investments in knowledge, skills, and specialization yield returns and value both to the individual and the organization. Furthermore, it is essential to ensure alignment between individuals' qualifications and competencies and the demands of the labour market (Rothomi & Rafid, 2023). According to Mehta (2024), a major challenge for educational institutions lies in investing in comprehensive training and professional development programs, upgrading teaching quality, and securing adequate funding for educational initiatives to enhance the overall performance of human capital.

In the sports sector, these challenges are further exacerbated by the frequent mismatch between the education received by young coaches, athletes, or administrative staff and the actual demands of the professional field. For example, many educational programs focus heavily on technical training, often neglecting essential entrepreneurial, managerial, communication, financial, and human resource management skills. The modern sports industry demands professionals with a multifaceted profile, which underscores the need for institutional adjustments in educational policy aimed at continuous training and high-quality upskilling. Markjackson and Innocent (2020) confirm a significant correlation between education, training, and performance, stating that "human capital must be supported and developed so that it becomes the core of a business's competitive strategy and advantage."

However, the GSEE's Centre for the Development of Educational Policy (KANEP-GSEE) (Goulas *et al.*, 2019) highlights the phenomenon of vertical and horizontal skills mismatch. Vertical mismatch (overeducation) occurs when an individual is employed in a job that requires a lower level of education than they possess, while horizontal mismatch arises when the field of education or the acquired skills are inappropriate for

the specific position. The report concludes that the Greek labour market does not adequately reward the specialization level of higher education graduates and points to the Greek economy's evident inability to generate high value-added jobs—thus perpetuating its negative economic cycle (Mosxou, 2022).

Similar observations apply to the sports sector, especially in Greece, where many young graduates with degrees in Physical Education or Sport Sciences are employed in unrelated fields due to a lack of institutional support, structured mapping of sport-related professions, and meaningful linkage between studies and employment. The absence of a clearly defined professional framework for many sport-related occupations, along with the lack of formal certification, leads to underemployment or the devaluation of professional qualifications.

Policymakers in education are thus called upon to implement targeted strategies that address existing gaps and align educational policies with contemporary demands. As Dudafa (2024) argues, comprehensive policy interventions, sound educational strategies, and institutions offering integrated educational programs tend to produce graduates who are better prepared to meet labour market challenges. Programs and initiatives aimed at enhancing youth employability and promoting the development of soft skills—such as critical thinking, problem-solving, and communication—appear to better equip students for success in the modern work environment (Ezzul Esa *et al.*, 2019). The sports economy provides fertile ground for implementing such collaborative models, as it necessitates coordination among public investments (in facilities, training, and professional development), private initiatives (sponsorships, clubs, academies), and educational institutions (e.g., departments of physical education, vocational institutes, universities). Only through such synergies can an efficient system of sports education and employment be established.

The integration of sport into the educational system requires a comprehensive political and institutional framework, as evidenced by the studies of Sulistiyono *et al.* (2018) and Ramadhan *et al.* (2023). These scholars highlight the tensions between the objectives of physical education and the development of elite sport, emphasizing that the formulation of educational sport policies must be rooted in the technical and social needs of the community. This suggests that a “bottom-up” approach can help reconcile conflicting interests between the goals of mass participation and elite sport development.

In parallel, the development of institutional strategies—such as the specialized training of teams in policy analysis (Nurhayati *et al.*, 2024) and the systematic approach to developing qualifications in sports education that support both managerial and coaching competencies. Walzel *et al.* (2022) enhances the capacity of institutions to address contemporary challenges and promote development-oriented policies.

International experiences further underscore the importance of adopting flexible policy frameworks and innovative institutional development strategies within the field of the sports economy. For instance, Zelin *et al.* (2023) document the rapid growth of the sports education market in China because of policy initiatives such as the “Double Reduction” strategy, which has accelerated the shift toward high-quality physical education as a core pillar for child development and lifelong health. Similarly, Moustakas and Işık (2020) highlight how a coherent mix of policy measures, investments in sports infrastructure, and enhanced training programs can significantly contribute to the development of the sports economy. This multifaceted approach leverages sport as a vehicle for broader social and economic outcomes.

An additional dimension in shaping educational policy within the field of sport concerns the interaction between governmental objectives and non-governmental stakeholders. Antonie *et al.* (2024) offer a case study from Romania, where the interplay between public sector initiatives and the broader sports movement led to innovative—albeit politically charged—policy approaches. Their analysis highlights the necessity of stakeholder engagement and multi-level governance to foster a dynamic policy environment that supports both broad participation and excellence in sport.

In conclusion, educational policy and institutional development strategies in the sports sector must be multifaceted and responsive to the competing demands of elite athlete development and the promotion of mass physical education. The conflicts between the goals of national curricula and elite sports policies must be addressed through enhanced cross-sectoral collaboration, the formation of capable policy analysis teams, and the implementation of adaptable educational frameworks capable of serving the diverse spectrum of sporting activities. A synthesis of findings from recent international studies (Antonie *et al.*, 2024; Moustakas & Işık, 2020; Nurhayati *et al.*, 2024; Ramadhan *et al.*, 2023; Sulistiyono *et al.*, 2018; Walzel *et al.*, 2022; Zelin *et al.*, 2023) supports the view that a coherent and integrated strategy—combining curriculum reform, stakeholder training, and institutional innovation—is essential for the effective development and sustained success of sports education policy.

SWOT Analysis: Higher Sports Education, Human Capital Development, and Employability

The object of the SWOT analysis is the relationship between higher sports education and employability, examined within the framework of human capital development. The analysis aims to identify the internal strengths and weaknesses of educational structures, along with the external opportunities and threats stemming from labour market demands, technological advancements and institutional frameworks.

To comprehensively map the interaction between higher sports education, human capital development and employability outcomes, this study applies the SWOT (Strengths, Weaknesses, Opportunities, Threats) framework, based on the results of the narrative review. This approach provides a concise yet systematic

representation of the key internal and external factors that shape the connection between sports education and the sports economy with the dynamics of the labour market in the athletic sector.

Table 1. Swot Analysis

<i>Strengths</i> ● Development of transferable skills ● Strategic enhancement of human capital ● Interdisciplinarity and technological innovation ● Networking and the strengthening of social capital	<i>Weaknesses</i> ● Mismatch between academic curricula and labour market needs ● Lack of institutional support for lifelong learning ● Limited development of entrepreneurial skills ● Absence of structured dual career programs
<i>Opportunities</i> ● Expansion of the sports economy ● Increased demand for specialized professionals ● Strengthening of links with the labour market ● Internationalization of academic programs and curricula	<i>Threats</i> ● Rapid technological change and the need for continuous upskilling ● Economic instability affecting the funding of sports and educational initiatives ● Market focus exclusively on athletic performance ● Inequities in access to quality education and employment opportunities

The analysis in Table 1 serves as a tool for informing policy reform in the field of sports education, enabling the capitalization on strengths, the timely mitigation of weaknesses and the defective exploitation of emerging opportunities.

Discussion

This study set out to explore the relationship between higher education and employability within the context of the evolving sports economy. It focused on how educational strategies, such as dual careers, lifelong learning, and entrepreneurship, enhance human capital and support professional integration. By examining the sports sector as a dynamic field where education, employment, and innovation converge, the study aimed to identify key mechanisms that promote sustainable economic growth and strengthen the role of education as a driver of employability. This aligns with findings that highlight the transformative potential of educational frameworks in fostering skills essential for employment and growth within the competitive landscape of sports and other sectors (Martins *et al.*, 2023; Ratten & Ferreira, 2017).

The findings of this paper confirm the multidimensional and mutually reinforcing relationship between education and employability. Research shows that investment in education benefits not only the individual but also society in general, as it enhances employability, productivity, and economic growth. Tailored educational programs have been shown to equip individuals with relevant skills and knowledge for better job placements in the sports industry (Chen Cheng, 2023). Conversely, employability provides the necessary incentives for the continuation of the educational journey, fostering lifelong learning and professional development (Jiang, 2022). The study of the sports sector as an illustrative case of this relationship highlights that sport is an emerging economic and social pillar, where education and employment interact in immediate and multidimensional ways, emphasizing the significance of integrating life skills into sports education for greater employability outcomes (Agnew *et al.*, 2019).

To interpret the results more effectively, this discussion is structured around key thematic areas, including the mismatch between qualifications and labour market demands, the role of education as a force of innovation, the impact of lifelong learning, dual careers, and the importance of strategic policy adaptation.

Challenges of mismatch between qualifications and labour market demands

The persistent mismatch between the qualifications acquired by graduates and the requirements of the labour market remains a major challenge. Educational institutions are called upon to continuously adapt their curricula to evolving market trends and demands to ensure the smooth transition of graduates into professional life. Cooperation among the state, educational institutions, and employers is vital for establishing an effective framework that fosters the strengthening of human capital. Literature suggests that a dual education system can significantly enhance market readiness by providing students with practical experience alongside vocational training, addressing the gap between academic qualifications and industry expectations (Zou *et al.*, 2024). Continuous engagement between educational stakeholders and the labour market has been emphasized as essential (Cope *et al.*, 2017).

Sports Education as a driving force for growth and innovation.

In the field of sports, such cooperation is crucial for upgrading the career trajectories of sports science graduates, strengthening ties with the labour market, and creating high value-added employment opportunities. The recognition of organized sports professions can enable educational institutions to align their curricula with industry needs, resulting in a more competent workforce (Chen Cheng, 2023). Particularly in the Greek context, institutional recognition of professions, the integration of academic and vocational education, as well as the

promotion of entrepreneurship in sports, can transform the sports sector into a driver of development and innovation (Martins *et al.*, 2023).

Skills, Dual Career, and Lifelong Learning

Moreover, findings underscore a complex dynamic between higher sports education and employability, shaped by the development of specialized skills, reinforcement of soft skills, and the strategic focus on lifelong learning and dual careers (Petclai, 2022). Graduates of higher education in sport acquire not only advanced technical and athletic competencies but also transferable skills such as teamwork, communication, and problem-solving, which are essential for successful integration into the labour market (Kaur *et al.*, 2025). The implementation of dual career strategies allows athletes to pursue education alongside sports, which has been associated with increased employability and adaptability in varying job markets (Zou *et al.*, 2024).

Strategic Policy Adaptation

Higher sports education emerges as a strategic means of developing human capital, enhancing both individual performance and holistic professional advancement through the integration of dual career programs and lifelong learning (Chencheng, 2023). This strategy extends to promoting innovation and entrepreneurship, where the combined use of knowledge and networking proves critical for competitiveness in an ever-evolving environment (Amiel & Abalasei, 2022). The design of educational programs that address the gaps between the education provided and the demands of the labour market is thus both essential and imperative (Martins *et al.*, 2023). The application of the SWOT analysis framework in the context of sports education and employability provides valuable insights into strengths (e.g., the development of transferable skills and the enhancement of human capital) as well as into weaknesses and threats, such as the mismatch between educational programs and labour market demands (Jiang, 2022). Integrating these findings into policy can facilitate a more effective response to market challenges and improve the performance outcomes of sports graduates (Chencheng, 2023).

Holistic Human Capital Development

The findings highlight that enhancing employability in the sports sector requires a coherent approach that combines educational reforms, innovation, and the adoption of an entrepreneurial mindset (So *et al.*, 2020). The comprehensive implementation of these strategies contributes to contemporary educational and professional policy, which aims not only at the development of individual skills but also at improving the overall economic and social capacity of the sports ecosystem. Overall, the discussion of results demonstrates that only through a holistic reinforcement of human capital—via integrated interventions at educational, social, and institutional levels—can long-term competitiveness in the international sports labour market be achieved (Martins *et al.*, 2023). The consolidation of such strategies strengthens the resilience of the sports economy and promotes the formation of a dynamic, innovative, and socially empowered sports ecosystem (Martins *et al.*, 2023).

Despite the structured methodological approach adopted, this study presents certain limitations. As a strictly systematic review protocol was not implemented, there may be a degree of selection bias due to the inherent subjectivity involved in the inclusion and interpretation of sources. Furthermore, the review primarily emphasizes European and academic discourse surrounding sports education, which limits the generalizability of its findings to other geographic or socio-cultural contexts (e.g., non-EU countries, non-institutional educational systems). Despite these caveats, the narrative approach was deemed appropriate for highlighting the interdisciplinary nature of the issue and for constructing a conceptual framework of reference that can serve as a basis for future empirical investigation in the field of sports education and economics.

Conclusions

The analysis of the relevant literature highlighted the central role of higher sports education in shaping a strong human capital capable of effectively responding to the demands of the contemporary and dynamically evolving labour market. In particular, the combined development of specialized technical skills and transferable soft skills, through strategies such as dual careers, lifelong learning, and the integration of entrepreneurship into academic curricula, emerges as a key factor in enhancing employability. This approach transforms athletic experience into a strategic competitive advantage.

At the same time, the upgrading of educational programs through the implementation of innovative methodologies and the integration of new technologies is essential to ensure alignment between educational provision and the evolving demands of the labour market. Moreover, institutional reforms that promote interdisciplinarity and a stronger link between education and the economy are critical factors for enhancing employability and fostering economic growth within an increasingly complex and globalized sports system.

Within this context, several educational policy recommendations are proposed to further improve the system and increase the efficiency of human capital in the sports sector. First, it is essential to strengthen the dual career strategy by fostering institutional collaboration among educational institutions, sports organizations, and business entities. This synergy aims to cultivate human capital that can address multifaceted professional demands. In parallel, the establishment of a lifelong learning culture in the sports sector is imperative. This can be achieved through the development of flexible and non-formal educational programs that incorporate modern technologies and practical experiences, thereby creating added value and enhancing the competitiveness of the sports industry.

Furthermore, promoting entrepreneurship within sports education should be a central component of academic policy. By integrating entrepreneurship and innovation-related courses into academic curricula, graduates will be better equipped to develop new products, services, and processes that optimize the functioning of sports organizations. This orientation not only broadens career prospects but also contributes to the formation of a dynamic and forward-looking sports ecosystem. Finally, advancing comprehensive institutional policies that promote collaboration among educational, sports, and business stakeholders—including sectors such as technology and entrepreneurship—is critical for establishing an integrated framework for human capital development. In this regard, the adoption of international best practices and active participation in European and global initiatives can significantly enhance the quality, relevance, and competitiveness of higher sports education.

Future Research Directions

Overall, the holistic enhancement of human capital through sports education requires sustained, cross-sectoral, and coordinated action—both at the level of educational programs and at the level of policies and institutions. The systematic implementation of such strategies can ensure the long-term competitiveness, resilience, and continuous developmental potential of the sports ecosystem at national and international levels.

Future research could further explore the connection between higher sports education, economic development, and labour market dynamics. In this context, several thematic areas merit further investigation. A cost-benefit analysis of educational programs in the sports sector would provide valuable insights into the economic performance of graduates, particularly through the measurement of employment absorption rates and income outcomes. Additionally, it is important to assess the economic impact of public and private investments in sports infrastructure and related programs, with a view to evaluating their contribution to local and regional development. Equally significant is the evaluation of the effectiveness of lifelong learning and training programs in the sports field. This should be approached using measurable indicators such as employability rates, career advancement, and return on investment. Finally, given the rapid evolution of the industry, attention should be directed toward emerging markets such as esports and sports technology. In these domains, further study is needed to understand the role of higher education in cultivating competitive human capital that is tailored to the specific needs of these innovative and fast-growing sectors.

In conclusion, strengthening the nexus between sports education and economic development can serve as a driving force for enhancing human capital, increasing employability, and expanding the sports ecosystem into a robust and innovative economic sector.

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References

- Abelkalns, I., Capranica, L., Doupona, M., Paegle, A., Stonis, J., Bisenieks, U., & others. (2021). Dual career support activities of high-performance students-athletes in the project “MORE THAN GOLD.” *Human, Technologies and Quality of Education*, Riga, University of Latvia, 1123–1136.
- Agnew, D., Jackson, K., Pill, S., & Edwards, C. (2019). Life Skill Development and Transfer beyond Sport. *Physical Culture and Sport, Studies and Research*, 84(1), 41–54. <https://doi.org/10.2478/pcssr-2019-0025>
- Amiel, N., & Abalasei, B. (2022). Developing Social Skills in Schools via Physical Education Programs: The Case of Israeli Male High School Students. *Sociologie Romaneasca*, 20(2), 27–48. <https://doi.org/10.33788/sr.20.2.2>
- Antonie, A., Begović, M., & Petracovschi, S. (2024). SPORT POLICY IN ROMANIA. *Sports Law, Policy & Diplomacy Journal*, 2(2), 17–35. <https://doi.org/10.30925/slpdj.2.2.2>
- Babinotis, G. (2002). *Dictionary of the Modern Greek Language*. Kentro Lexikologias EPE.
- Baker, C., Loughren, E. A., Dickson, T., Goudas, M., Crone, D., Kudlacek, M., Petr, M., Petrova, L., Pichot, L., Frery, J. C., Benoit, A., Knobé, S., Schröder, J., Valenzuela, A. V., Cruz Sánchez, E. D. la, López-Bachero, M., Villarejo, D., Serrejón, F., Mortiboys, C., ... Tassell, R. (2017). Sports graduate capabilities and competencies: a comparison of graduate and employer perceptions in six EU countries. *European Journal for Sport and Society*, 14(2), 95–116. <https://doi.org/10.1080/16138171.2017.1318105>
- Becker, G. S. (1993). *HUMAN CAPITAL A Theoretical and Empirical Analysis with Special Reference to Education* (third). The University of Chicago Press.
- Bourdieu, P. (1986). The Forms of Capital. In J. Richardson (Ed.), *Handbook of Theory and Research for the Sociology of Education* (pp. 241–258). Greenwood. <https://www.marxists.org/reference/subject/philosophy/works/fr/bourdieu-forms-capital.htm>
- Bulbul, A. (2020). Examination of Lifelong Learning Trends of Physical Education and Sports Teachers on Different Variables. *Journal of Education and Learning*, 9(6), 94–101. <https://doi.org/10.5539/jel.v9n6p94>
- Burnett, C. A., & Taylor, Z. W. (2023). “Rec Sports Was So Good for Me”: How College Graduates Developed Marketable Skills as Recreational Sports Student Employees. *Recreational Sports Journal*, 47(2), 136–147. <https://doi.org/10.1177/15588661231186805>
- Chencheng, C. (2023). Research on the Reform of Higher Vocational Physical Education Curriculum in the Perspective of Occupational Physical Fitness Requirements. *Frontiers in Sport Research*, 5(9), 26–30. <https://doi.org/10.25236/fsr.2023.050905>

- Chiang, T. H., Thurston, A., & Lin, H. C. (2020). How the excellent working-class student becomes a cultural capital constructor: Reflections on the theories of cultural reproduction. *International Journal of Educational Research*, 103(100), 101625. <https://doi.org/10.1016/j.ijer.2020.101625>
- Condello, G., Capranica, L., Doupona, M., Varga, K., & Burk, V. (2019). Dual-career through the elite university student-athletes' lenses: The international FISU-EAS survey. *PLoS ONE*, 14(10), e0223278. <https://doi.org/10.1371/journal.pone.0223278>
- Cope, E., Bailey, R., Parnell, D., & Nicholls, A. (2017). Football, sport and the development of young people's life skills. *Sport in Society*, 20(7), 789–801. <https://doi.org/10.1080/17430437.2016.1207771>
- Corrales-Herrero, H., & Rodríguez-Prado, B. (2018). The role of non-formal lifelong learning at different points in the business cycle. *International Journal of Manpower*, 39(2), 334–352. <https://doi.org/10.1108/IJM-08-2016-0164>
- De Coninck, D., & Van Bavel, J. (2023). From cobblestones to cohesion: the role of professional cycling in the development of social capital in Flanders, Belgium. *European Journal for Sport and Society*, 20(3), 221–242. <https://doi.org/10.1080/16138171.2022.2083808>
- Debois, N., Ledon, A., & Wylleman, P. (2015). A lifespan perspective on the dual career of elite male athletes. In *Psychology of Sport and Exercise*, 21, 15–26. <https://doi.org/10.1016/j.psychsport.2014.07.011>
- Dinning, T. (2017). Preparing sports graduates for employment: satisfying employers' expectations. *Higher Education, Skills and Work-Based Learning*, 7(4), 354–368. <https://doi.org/10.1108/HESWBL-02-2017-0017>
- Drewery, D. W., Sproule, R., & Pretti, T. J. (2020). Lifelong learning mindset and career success: evidence from the field of accounting and finance. *Higher Education, Skills and Work-Based Learning*, 10(3), 567–580. <https://doi.org/10.1108/HESWBL-03-2019-0041>
- Dudafa, J. (2024). Education Disparities and Human Capital Development in Rural Communities of Bayelsa State: A Comparative Study. *International Journal of Research Publication and Reviews*, 5(10), 426–433. <https://doi.org/https://doi.org/10.55248/gengpi.5.1024.2717>
- Ertekin, A. B. (2021). The Relationship Between Innovation Skill and Entrepreneurship on Bachelor Students of Sports Education. In *Journal of Educational Issues*, 7(1), 324–336. <https://doi.org/10.5296/jei.v7i1.18405>
- Eurostat. (2024, July 26). *1.55 million people employed in sport in 2023*. <https://ec.europa.eu/eurostat/web/products-eurostat-news/w/Ddn-20240726-2>.
- Ezzul Esa, M., Mahzan Awang, M., Razaq Ahmad, A., & Ahmad, A. (2019). Developing Thinking Skills Among Students Towards Creating Quality Human Capital. *The 2nd International Conference on Sustainable Development & Multi-Ethnic Society*, 208–215. <https://doi.org/10.32698/gcs.0199>
- Filiz, U. (2019). *An assessment on the importance of human capital in economic growth. 5th International Conference – ERAZ 2019 – Knowledge Based Sustainable Development, Budapest – Hungary, May 23, 2019, Conference Proceedings*. <https://doi.org/10.31410/eraz.2019.53>
- Fuchs, P. X., Doupona, M., Varga, K., Bon, M., Cortis, C., Fusco, A., Castellani, L., Niemisalo, N., Hannola, H., Giron, P., Forster, J., Capranica, L., & Wagner, H. (2021). Multi-national perceptions on challenges, opportunities, and support structures for Dual Career migrations in European student-athletes. *PLoS ONE*, 16(6 June). <https://doi.org/10.1371/journal.pone.0253333>
- González-Serrano, M. H., Ano Sanz, V., & González-García, R. J. (2020). Sustainable Sport Entrepreneurship and Innovation: A Bibliometric Analysis of This Emerging Field of Research. *Sustainability*, 12, e5209. <https://doi.org/doi:10.3390/su12125209>
- Goulas, X., Zagros, X., & Pahzis, N. (2019). *Skills, education and employment: Educational indicators and the workforce*.
- Guidotti, F., Cortis, C., & Capranica, L. (2015). DUAL CAREER OF EUROPEAN STUDENT-ATHLETES: A SYSTEMATIC LITERATURE REVIEW DVOJNA KARIERA EVROPSKIH ŠTUDENTOV ŠPORTNIKOV-PREGLED LITERATURE. *Kinesiologia Slovenica*, 21, 5–20.
- Hammerschmidt, J., González-Serrano, M. H., Puumalainen, K., & Calabuig, F. (2024). Sport entrepreneurship: the role of innovation and creativity in sport management. *Review of Managerial Science*, 18(11), 3173–3202. <https://doi.org/10.1007/s11846-023-00711-3>
- Hammerschmidt, J., Kraus, S., & Jones, P. (2022). Sport Entrepreneurship: Definition and Conceptualization. *Journal of Small Business Strategy*, 32(2), 1–10. <https://doi.org/https://doi.org/10.53703/001c.31718>
- Harris, C. M., Brown, L. W., & Pattie, M. W. (2022). You are drafted: the role of employee and manager human capital on employee career advancement. *Journal of Organizational Effectiveness: People and Performance*, 9(3), 506–523. <https://doi.org/10.1108/JOEPP-07-2021-0189>
- Harrison, G. E., Vickers, E., Fletcher, D., & Taylor, G. (2022). Elite female soccer players' dual career plans and the demands they encounter. *Journal of Applied Sport Psychology*, 34(1), 133–154. <https://doi.org/10.1080/10413200.2020.1716871>
- Harris-Reeves, B. (2023). From passion to profession: an employability framework in sport development. *Journal of Teaching and Learning for Graduate Employability*, 14(1), 237–247.
- Helyer, R. (2017). Editorial. *Higher Education, Skills and Work-Based Learning*, 7(4), 334–336. <https://doi.org/10.1108/HESWBL-09-2017-0070>

- Jiang, Z. (2022). The Teaching of Sports Physical Education Skills under Exercise Physiology Based on Support Vector Machine. *Discrete Dynamics in Nature and Society*, e4416617. <https://doi.org/10.1155/2022/4416617>
- Jin, Y. (2022). Analysis of College Students' Entrepreneurship Education and Entrepreneurial Psychological Quality from the Perspective of Ideological and Political Education. *Frontiers in Psychology*, 13, e739353. <https://doi.org/10.3389/fpsyg.2022.739353>
- Kanellopoulos, K. N., Mavromaras, K. G., & Mitrakos, Th. M. (2004). *Education and labor market*. KEPE.
- Kaur, R., Gurav, Y., & Dharmadhikari, S. P. (2025). Exploring Dual Degree Programmes in Indian Management Education- Analyzing Awareness, Willingness and Students' Expectations. *Journal of Engineering Education Transformations*, 38(4), 87–102. <https://doi.org/10.16920/jeet/2024/v38i4/25099>
- Kaya, K. (2020). Examining the Lifelong Learning Tendencies of Sport Sciences Faculty Students. *Journal of Education and Learning*, 9(3), 99. <https://doi.org/10.5539/jel.v9n3p99>
- Lara-Bocanegra, A., Bohórquez, M. R., & García-Fernández, J. (2022). Innovation from sport's entrepreneurship and intrapreneurship: opportunities from a systematic review. *International Journal of Sports Marketing and Sponsorship*, 23(5), 863–880. <https://doi.org/10.1108/IJSMS-12-2020-0212>
- Laura Mamuli, C. (2020). Human Capital Development and Higher Education. *European Business & Management*, 6(4), 61. <https://doi.org/10.11648/j.ebm.20200604.11>
- Lee, C. W., Yeh, M. C., & Hung, H. C. (2021). Dream Big: Effects of Capitals, Socioeconomic Status, Negative Culture, and Educational Aspirations Among the Senior High School Student Athletes. *Frontiers in Psychology*, 12. <https://doi.org/10.3389/fpsyg.2021.601775>
- Leoni, S. (2023). A Historical Review of the Role of Education: From Human Capital to Human Capabilities. *Review of Political Economy*, 8259. <https://doi.org/10.1080/09538259.2023.2245233>
- López-Flores, M., Hong, H. J., & Botwina, G. (2021). Dual career of junior athletes: Identifying challenges, available resources, and roles of social support providers. *Monographias de La Revista CCD*, 16, 117–128.
- Markjackson, D., & Innocent, A. O. (2020). An Exploratory Study On Human Capital Investments. *International Journal of Scientific and Research Publications (IJSRP)*, 10(06), 663–667. <https://doi.org/10.29322/ijsrp.10.06.2020.p10277>
- Martins, D., Ardions, I., Mendonça, P., Carvalho, P., Marcen, C., Vivirito, S., Stöcker, N., Sitzberger, C., Gaser, D., Araújo, P. J., Oliveira, J., Garamvölgyi, B., & Juhász, E. (2023). *Final report on sport coaches' capacity to use sport as a tool for the development of skills and competencies functional to the Labour market*. CEOS Edições. <https://doi.org/10.56002/ceos.0087b>
- Martinsone, S. S. (2024). Mentoring in a Dual Career in Sports: Systematic Review. *LASE Journal of Sport Science*, 15(1–2), 144–154. https://doi.org/10.25143/lase_joss.v15i1-2.12
- Matic, R. M., Gonzalez-Serrano, M. H., Damnjanović, J., Maksimovic, B., Papić-Blagojević, N., Milošević, I., & Vuković, J. (2022). Professional competencies development of sports science students: the need for more entrepreneurship education. *Management & Marketing*, 17(s1), 426–448. <https://doi.org/10.2478/mmcks-2022-0024>
- Mehta, R. (2024). Education Investment and Human Capital Development in India. *Journal of Poverty, Investment and Development*, 9(1), 50–63. <https://doi.org/10.47604/jpid.2587>
- Metelski, A. (2022). Higher Education and Athlete's Second Career. *Journal of Education, Health and Sport*, 12(6), 314–322. <https://doi.org/10.12775/jehs.2022.12.06.030>
- Mosxou, S. (2022). *The Transition from Education to the Labor Market*. INE-GSEE.
- Moustakas, L., & Işık, A. A. (2020). Sport and sustainable development in Botswana: towards policy coherence. *Discover Sustainability*, 1:5. <https://doi.org/10.1007/s43621-020-00005-8>
- Mumcu, H. E., Karakullukçu, Ö. F., & Karakuş, M. (2019). Youth employment in the sports sector. *OPUS International Journal of Society Researches*, 11(18), 2649–2645. <https://doi.org/10.26466/opus.535301>
- Nová, J. (2015). Specific Features of Sport and their Influence on Entrepreneurship in Sport. *Studia Sportiva*, 9(1), 197–206. <https://doi.org/10.5817/StS2015-1-25>
- Nurhayati, R., Hajaroh, M., Purwastuti, L. A., & Rohman, A. (2024). Training on Education Policy Analysis for Education Stakeholders in Brebes District. *Jurnal Pendidikan Dan Pemberdayaan Masyarakat*, 11(1), 99–112. <https://doi.org/10.21831/jppm.v11i1.72653>
- Oliveira, T. C. de, Carneiro-da-Cunha, J. A., Colagrai, A. C., Ferreira, M. P., & Mazieri, M. R. (2024). Organizational policies as a means of sharing sports values among athletes: the role of social capital. *Journal of Strategy and Management*, 17(3), 444–465. <https://doi.org/10.1108/JSMA-03-2022-0045>
- Papailiou, D. (2015). *Performance evaluation criteria for basketball coaches with experience in education and clubs* [University of Peloponnese]. <https://doi.org/10.12681/eadd/36741>
- Papakonstantinou, G. (2003). *Supply and demand of higher education*. Metechmio.
- Pereira, E. T., Vilas-Boas, M., & Rebelo, C. C. (2019). Graduates' skills and employability: the view of students from different European countries. *Higher Education, Skills and Work-Based Learning*, 9(4), 758–774. <https://doi.org/10.1108/HESWBL-10-2018-0098>

- Petclai, W. (2022). The development of blended learning - based basketball coach model for physical education students of Thailand national sports university (Lampang campus). *International Journal of Health Sciences*, 6(S3), 1356–1363. <https://doi.org/10.53730/ijhs.v6ns3.5563>
- Pounder, P. (2019). Examining interconnectivity of entrepreneurship, innovation and sports policy framework. *Journal of Entrepreneurship and Public Policy*, 8(4), 483–499. <https://doi.org/10.1108/JEPP-08-2019-111>
- Ramadhan, M. G., Ma'mun, A., Nuryadi, N., & Juliantine, T. (2023). Sports Policy on The Scope of Educational Sports Development Patterns: An Analysis Study. *JUARA : Jurnal Olahraga*, 8(1), 443–457. <https://doi.org/10.33222/juara.v8i1.2420>
- Ratten, V., & Ferreira, J. J. (2017). *Sport entrepreneurship and innovation* (1st ed.). Routledge New York. <https://doi.org/https://doi.org/10.4324/9781315393384>
- Ratten, V., & Jones, P. (2018). Future research directions for sport education: toward an entrepreneurial learning approach. *Education and Training*, 60(5), 490–499. <https://doi.org/10.1108/ET-02-2018-0028>
- Robnik, P., Kolar, E., Štrumbelj, B., & Ferjan, M. (2022). Dual Career Development Perspective: Factors Affecting Quality of Post-sport Career Transition of Employed Olympic Athletes. In *Frontiers in Psychology* (Vol. 12). <https://doi.org/10.3389/fpsyg.2021.800031>
- Rothomi, A., & Rafid, M. (2023). Relationship Analysis and Concept of Human Capital Theory and Education. In *EDUCATUM: Scientific Journal of Education* (Vol. 1, Issue 1, pp. 26–31). <https://doi.org/10.59165/educatum.v1i1.14>
- Şahin, A. (2023). Future Vision in Faculties of Sports Sciences: An Analysis on Strategic Management. *Akdeniz Spor Bilimleri Dergisi*. <https://doi.org/10.38021/asbid.1364102>
- Santanski, I. (2023). Students Sport Events as a Mechanism for Developing Human and Social Capital. *Research Papers*, 63(2), 203–212. <https://doi.org/10.37075/RP.2023.2.15>
- Sarlis, E. (2024). *Data science for sports analytics* [International University of Greece]. <https://doi.org/10.12681/eadd/56447>
- Schultz, T. W. (1961). Investment in Human Capital. *The American Economic Review*, 51(1), 1–17. <http://www.jstor.org/stable/1818907>
- Skoblikova, T. V., Skripleva, E. V., & Voloshina, L. N. (2025). Sociocultural significance of training in physical education and sport in the system of higher education. *Perspectives of Science and Education*, 73(1), 135–148. <https://doi.org/10.32744/pse.2025.1.9>
- So, H., Ha, T., Yu, H., & Gentry, C. (2020). Effects of a Sport Education Intervention on Students' Self-Esteem and Sport Confidence in University Badminton Classes. *Journal of Health Sports and Kinesiology*, 1(1), 12–15. <https://doi.org/10.47544/johsk.2020.1.1.12>
- Somerville, F. (2020). Capabilities for media graduate employability: a case study of private higher education in South Africa. *Journal of Comparative & International Higher Education*, 11(Winter), 189–191. <https://doi.org/10.32674/jcihe.v11iwinter.1463>
- Sulistiyono, Suherman, W., & Kurnianto, D. (2018). Physical Education Sport and Health National Curriculum and Elite Sport Development: Policy, Synergy, or Conflict? In *Advances in Social Science, Education and Humanities Research*, 558-562. Atlantis Press.
- Tekavc, J., Wylleman, P., & CeciĆ Erpić, S. (2015). Perceptions of dual career development among elite level swimmers and basketball players. *Psychology of Sport and Exercise*, 21, 27–41. <https://doi.org/https://doi.org/10.1016/j.psychsport.2015.03.002>
- Tiligada, E. (2022). *Collaboration and professional development of teachers in the Learning Community: Attitudes and perceptions of secondary education teachers in the Prefecture of Attica* [National and Kapodistrian University of Athens]. <https://www.didaktorika.gr/eadd/bitstream/10442/51175/1/51175.pdf>
- Tsitskari, E., Goudas, M., Tsalouchou, E., & Michalopoulou, M. (2017). Employers' expectations of the employability skills needed in the sport and recreation environment. *Journal of Hospitality, Leisure, Sport & Tourism Education*, 20, 1–9. <https://doi.org/https://doi.org/10.1016/j.jhlste.2016.11.002>
- Vidal-Vilaplana, A., González-Serrano, M. H., & Calabuig-Moreno, F. (2024). Exploring employable profiles of elite student athletes through fsQCA: unleashing the power of their soft skills. *Education and Training*. <https://doi.org/10.1108/ET-04-2024-0157>
- Walzel, S., Crabtree, R., & Petry, K. (2022). European perspectives on qualifications in sport. In *Education in Sport and Physical Activity: Future Directions and Global Perspectives*, 99–109. Taylor and Francis. <https://doi.org/10.4324/9781003002666-12>
- World Bank. (2016). Human capital and economic growth: Human capital literature review. *Economic & Labour Market Review*, 53(2), 552–555.
- Zelin, L., Duan, X., Cheng, H., Liu, Z., & Zhang, Y. (2023). Empowering High-Quality Development of the Chinese Sports Education Market in Light of the “Double Reduction” Policy: A Hybrid SWOT-AHP Analysis. *Sustainability*, 15(3), e2107. <https://doi.org/https://doi.org/10.3390/su15032107>
- Zou, A., Liria, M., & Dacanay, D. (2024). Assessing the Relationship between College Student Leadership and Participation in Extra Curricular Sports Activities. *International Journal of Education and Humanities*, 16(S), 1-4.