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Professionalization of Physical Education and Sports in Brazil: Higher Education Evolution

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B) acquisition of data
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Abstract

The education of sports coaches is transforming globally, with European nations recognizing its importance and promoting professionalization through European Commission initiatives. More than two decades ago, Brazil officially recognized sports coaches as a profession and as one of the activities for a Bachelor of Physical Education . This development sparked a broader discourse regarding the professionalization of individuals within this field. This study analyzes the state of Physical Education within Brazilian higher education following this formal recognition. This study employs a secondary analysis of governmental summary reports from 2004 to 2019. The Physical Education program currently ranks in the top ten undergraduate courses, with an enrollment of 239,008 students. 2019 Bachelor's degree programs in Physical Education increased to 825, compared to 553 programs in 2017. Throughout the analyzed period, there has been a notable increase in PE teacher licenses and bachelor's degree offerings in Physical Education, especially within the private sector. Throughout the analyzed timeframe, there was a significant rise in the availability of Physical Education teachers and bachelor's undergraduate courses, particularly within the private sector. This trend indicates a growing emphasis on physical education curricula and the preparation of qualified professionals in this field. Furthermore, there has been a marked diversification in the demographics of enrolled students, encompassing a wider range of ages and ethnic backgrounds, alongside a growing number of low-income applicants. The statistics from Brazil may provide insights into coach professionalization; however, they should not be regarded as a standard for international benchmarking.

Keywords: Public policies, legislation, sports coaches, formal education, diversity

Introduction

In recent years, scholars and researchers have given considerable attention to professionalization in sports coaching, particularly those originating from Europe and North America (Gill, 2021; Jones & Kingstone, 2013; Kjaer, 2019; Lyle & Cushion, 2017; North et al., 2019; Ronkainen et al., 2022; Solanas et al., 2022; Taylor & Garrat, 2010). While various studies have been conducted in these regions, Brazil remains a context to be studied. It is worth noting that Brazil took a step in this direction over two decades ago by approving legislation that acknowledged Physical Education as a profession (Brazil, 1998).

According to Law No. 9,696/1998, only graduates from accredited Physical Education programs who are registered with the appropriate Regional Council are

legally authorized to engage in professional activities, including sports coaching (Brazil, 1998). Article 3 of this legislation specifies that holders of a bachelor's degree in Physical Education are responsible for the planning, prescription, and evaluation of sports training across all performance levels. This legal stipulation emphasizes the importance of formal academic preparation in relation to professional coaching practice. Moreover, CONFEF Resolution No. 046/2002 reiterates this requirement by stating that only individuals with a bachelor's degree in Physical Education and the requisite registration may conduct interventions in sports settings, thereby ensuring compliance with technical, scientific, and ethical standards (FCPE, 2002). In 2002, the profession of Physical Education was incorporated into the Brazilian Classification of Occupations by the Ministry of Labor and assigned the code 2241 (Ministry of Labor, 2023). The FCPE (2016a) posits that sports constitute a specialized domain within Physical Education, characterized by a distinct set of skills and competencies that enhance the specific knowledge and techniques inherent in the profession. Notably, Physical Education professionals play a pivotal role in promoting both physical and mental well-being, thus providing significant services to society (FCPE, 2002).

Resolution 46 of the Federal Council for Physical Education (FCPE) authorizes Physical Education professionals to engage in a diverse range of sports-related activities, including gymnastics, sports, fitness, martial arts, and recreation. Such professionals may operate independently or within public and private institutions, including schools, research centers, hotels, hospitals, nursing homes, public venues, and parks. They are equipped to deliver services pertaining to physical activities, sports, and recreation across various contexts. Consequently, the mentioned legislation unequivocally articulates that sports coaching is a function exclusive to Bachelor's Physical Education professionals (see Santos, 2018).

Resolution CNE/CES No. 7/2004 delineates specific curricular guidelines for the licentiate and bachelor's degrees in Physical Education, reflecting their distinct educational objectives and professional domains. The licentiate degree is designed to prepare educators for teaching physical education in basic education settings, with a strong emphasis on the pedagogical dimensions of human movement, thereby aligning with the National Curriculum Guidelines for Teacher Education (Ministry of Education, 2004). Conversely, the bachelor's degree qualifies individuals for roles in non-school environments, such as gyms, clubs, hospitals, and sports organizations, focusing on health promotion, performance training, rehabilitation, leisure, and management of physical activity enterprises (Ministry of Education, 2004). For instance, licentiate programs typically include courses such as Organization of Basic Education in Brazil, while bachelor's programs concentrate on technical and practical knowledge, including subjects like Physical-Sports Training Planning. Despite these differences, both educational pathways are grounded in scientific, ethical, and humanistic principles (Ministry of Education, 2004).

Specific attributes are often utilized to delineate professional occupations. These characteristics comprise possessing advanced abilities founded on systematic theory and research, providing services to clients or patients, holding a monopoly to offer specific services to the community, adhering to ethical codes to ensure the welfare of clients, and conforming to the expectations and standards of their professional subculture (Hoffman, 2013; North et al., 2019). It can be challenging to categorize specific job roles as falling exclusively under either the professional or non-professional category. The path to becoming a professional in the health field is multifaceted and requires attention to essential areas such as professional competencies, professional culture, and professional identity. This process is dynamic and ongoing, starting with a student's initial vision of their future role and continuing throughout their educational journey (Belisle et al., 2020).

Before delving into the effects of professionalization in Physical Education and Sports on Higher Education in Brazil, it is relevant to trace briefly its historical development. The profession of Physical Education was officially recognized in Brazil through the enactment of Law 9696 (Brazil, 1998). As per this law's provisions, only individuals duly registered with the FCPE, established by the same legislation, are authorized to conduct physical and sports-related activities as mentioned previously in Resolution 46 (FCPE, 2002) and be referred to as Physical Education Professionals (Ministry of Labor, 2002). To be eligible for registration with the FCPE, one must possess a diploma in Physical Education from a Higher Education Institution (HEI) that is officially authorized or recognized (Brazil, 1998). Implementing Law nº 9696 resulted in the creation of Federal and Regional Councils of Physical Education. According to the FCPE Statute (FCPE 1999b, 2022), the legislation assumes the critical role of overseeing and regulating the activities of Physical Education Professionals and Legal Entities providing physical activity, exercise, and sports services. After implementing Law 9696, it became clear that many individuals working in physical activity, physical exercise, and sports lacked higher education degrees (Martins, 2016). This resulted in a problematic process of professionalization. Resolution No. 13 of the FCPE (1999a) allowed individuals involved in Physical Education activities before September 1, 1998 to register with the FCPE and receive a specific professional registration limiting them to working only in the area of their registration. The goal was to encourage those already working in the field to pursue higher education and expand their knowledge. However, this issue was

mired in legal disputes until Law 14,386 was approved in (Brazil, 2022). Only in 2023, after the Brazilian Federal Supreme Court (Supremo Tribunal Federal, 2023) made its decision, was the recognition of this profession confirmed, ending the legal dispute.

According to the FCPE (2002), professionals possess expertise in diverse physical activities and specialize in various forms of human movement. Their duties encompass administering, guiding, teaching, and assessing exercise and sports. Physical Education professionals should consider social context, history, culture, region, and individual needs to provide tailored services and programs in diverse manifestations of human movement, such as sports and physical exercise. The regulation of Physical Education as a professional activity emphasizes the importance of specialized technical and scientific knowledge and the development of specific competencies for their application.

In Brazil, in parallel with the process of professionalization that requires a Higher Education degree, the Ministry of Education (ME) instituted National Curriculum Guidelines for undergraduate courses in Physical Education at the level of higher education (ME, 2004). According to these National Curriculum Guidelines, Physical Education is an area of academic-professional knowledge intervention whose object is the study and application of human movement. It focuses on the different forms and modalities of physical exercise, gymnastics, games, sports, and martial arts from the perspectives of preventing health problems, promotion, protection and rehabilitation of health, cultural training, education and motor re-education, physical and sporting performance, leisure, health management ventures related to physical, recreational and sports activities, in addition to other fields that provide opportunities for practice (ME, 2004). The National Institute of Studies and Research (NISR) established the guidelines for the Physical Education curricula. At the same time, the government implemented a legal framework for the National Higher Education Assessment System (NHEAS) (Brazil, 2004; NISR, 2004a). This system aimed to ensure a standardized evaluation process for HEIs, their respective degree programs, and the academic performance levels of their students. The National Examination of Student Performance (NESP) assesses students' proficiency in undergraduate courses and evaluates their performance based on the curriculum guidelines. In addition to the assessment process, a survey has been devised to delineate the attributes of the students and facilitate a deeper understanding of the outcomes (Brazil, 2004).

The significance of initial and ongoing education is paramount in training and professional performance. Education gives individuals the necessary knowledge, skills, and competencies to work effectively. Key elements of the education of Physical Education professionals encompass formal education, certification, professional development, apprenticeship, and continuing education, which is highlighted in different documents of the FCPE (2015, 2016a, 2016b, 2017). Consequently, with the professionalization of the area, there was a need to adapt the higher education system to meet the demand for professional training.

The historical development of Physical Education as a profession in Brazil provides significant insights into the contemporary and international discourse surrounding sports coaching professionalization (Ronkainen et al., 2022; Thelwell & Dicks, 2018) and the International Council for Coaching Excellence (ICCE) proposal to implement a specific curriculum for the education of sports coaches (ICCE, 2023).

This study aims to analyze the official data regarding Physical Education in Brazilian HEIs. Specifically, the focus will be on the period since this field was recognized as a professional occupation. The study will delve into the characteristics of the expansion of the higher education system in Brazil and explore the socio-economic backgrounds of those who have opted to pursue a career in Physical Education.

Method

The method used is the secondary analysis of governmental documents. The secondary analysis process entails examining pre-existing data that a third party has collected. This approach allows for utilizing data that would otherwise be unavailable and can provide valuable insights and perspectives on various topics and issues (Watkins & Johnson, 2023). By leveraging existing data, organizations can save time and resources while gaining the necessary knowledge and understanding in their respective fields (Bryman, 2013; Ruggiano & Perry, 2019). Additionally, the secondary analysis presents the chance for conducting longitudinal research, a rarity in the social sciences due to its significant time and financial requirements (Bryman, 2013). Social scientists can access a wealth of statistical data collected and maintained by various organizations, including government departments and their representatives (Vartanian, 2010). This data can prove to be valuable in conducting research and analyzing trends. As such, researchers must thoroughly understand the sources and accuracy of the data they utilize (Bryman, 2013; Rodriguez, 2021). According to Allin (2021), governments can improve their policies by utilizing new data sources, and researchers can benefit from the availability of anonymous data.

Procedures

The information considered in this research was produced by summary reports on the NESP of igher education

students in Physical Education produced by the NISR (2004b, 2007, 2010, 2011, 2013, 2014, 2016, 2017, 2019). It is mandatory for undergraduate students who have met the set percentage requirements to undertake the NESP (Brazil, 2004). This assessment is designed to evaluate their performance in their final year of studies and is conducted regularly. In 2004 and 2007, students pursuing a degree in Physical Education to become teachers and bachelor's sat the National Performance Examination on a unified date. However, in subsequent evaluation cycles, separate assessments were conducted for Physical Education teachers and bachelors, each occurring in different years. As part of the evaluation process, a student questionnaire was utilized to gather information and create the profile of participants. Analyzing this data provided valuable insight into the socioeconomic backgrounds of the students—the reports from 2004 to 2019 show how Physical Education courses in higher education progressed across the country. The analysis focuses on the period from 2004 to 2019 due to the stability of the National Curriculum Guidelines established by Resolution 7/2004, which governed the education of professionals in Physical Education during this time. Following 2019, revisions to these curricular guidelines were implemented, marking the start of a new cycle of guidelines and evaluations (ME, 2004; ME, 2018).

Data Collection

Upon researching the official website of the NISR, which falls under the purview of the Ministry of Education, the collection of reports was organized in folders and saved in Adobe Acrobat PDF format. This research specifically focused on all the reports related to Physical Education (NISR, 2004b, 2007, 2010, 2011, 2013, 2014, 2016, 2017, 2019). The information contained within the reports is crucial, including national standards for Physical Education courses, the distribution of courses and students nationwide, and student demographics data.

Data Analysis

In this study, secondary data analysis was conducted using IBM SPSS Statistics version 27. The dataset utilized for analysis was obtained from the official website of the NISR. First, the datasets were reviewed to ensure they were relevant to the research questions posed in this study. Once deemed suitable, the datasets were cleaned and prepared for analysis. This process involved checking for missing data and inconsistencies and making necessary adjustments to ensure data quality.

Descriptive analysis was performed to gain an overview of the variables categorized based on the year, number of courses offered, public and private sector classification, and the number of students classified according to their public and private sector backgrounds and the type of institution they attended. Furthermore, it provided information on the student profile, including their gender, age, race, and monthly family income, to offer a more in-depth understanding of the expansion of the Physical Education courses during this period.

The statistical analysis comprised the calculation of descriptive measures, including the mean, standard deviation, and range for continuous variables, and the frequencies and percentages for categorical variables. Additionally, graphic representations such as histograms and bar charts were generated to visualize the data distribution. The descriptive analysis provided valuable insights into the characteristics and patterns present in the dataset.

Results

In 1998, the Brazilian government enacted legislation officially recognizing Physical Education as a profession (Brazil, 1998). By the time the law was established, there were a total of 166 higher education courses dedicated to the field, with 78 offered by public institutions and 88 by private institutions (NISR, 2006). The growth of Physical Education undergraduate courses from 2004 to 2019 is presented in Figure 1.

In 1998, there were 7,213 students in the final phase of Physical Education courses, including those pursuing teacher and bachelor degrees. Of this total, 2,872 students attended public institutions, while 4,341 students attended private institutions. Figure 2 illustrates the escalation in student population over 15 years, from 2004 to 2019. There was a substantial upswing in enrollment rates in privately-owned educational establishments during this period.

Higher education in Brazil is a multifaceted system that has undergone numerous changes over the years. Both public and private institutions offer higher education in Brazil. Public institutions provide free education and are primarily funded by the federal, state, or municipal government. The government funding is intended to cover expenses for staff and faculty salaries, infrastructure maintenance, operational costs, research, and other academic projects (Salto, 2018). In Brazil, public institutions have traditionally used admission exams to select students for undergraduate courses. Each institution organizes these exams, and their format and content can differ. The exams are highly competitive, with many candidates vying for a limited number of study vacancies, especially at the most prestigious public universities (Azevedo, 2020). The National Secondary Education Examination (NSEE) has emerged as a popular method of entry into Brazilian public universities (NISR, 2024). This test, conducted annually by the Brazilian Ministry of Education (ME), was initially designed to assess the quality of secondary

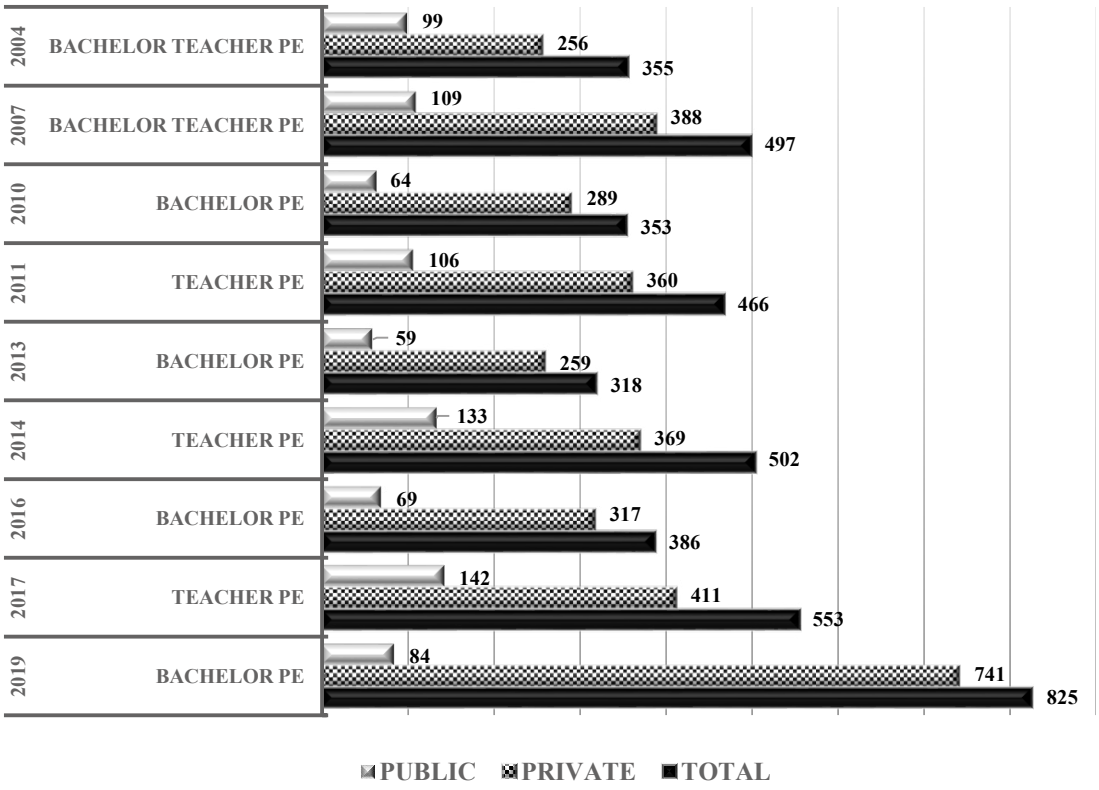

Figure 1. Number of Physical Education courses for teachers or bachelors of Physical Education, categorized by administrative organization (NISR, 2004b, 2007, 2010, 2011, 2013, 2014, 2016, 2017, 2019).

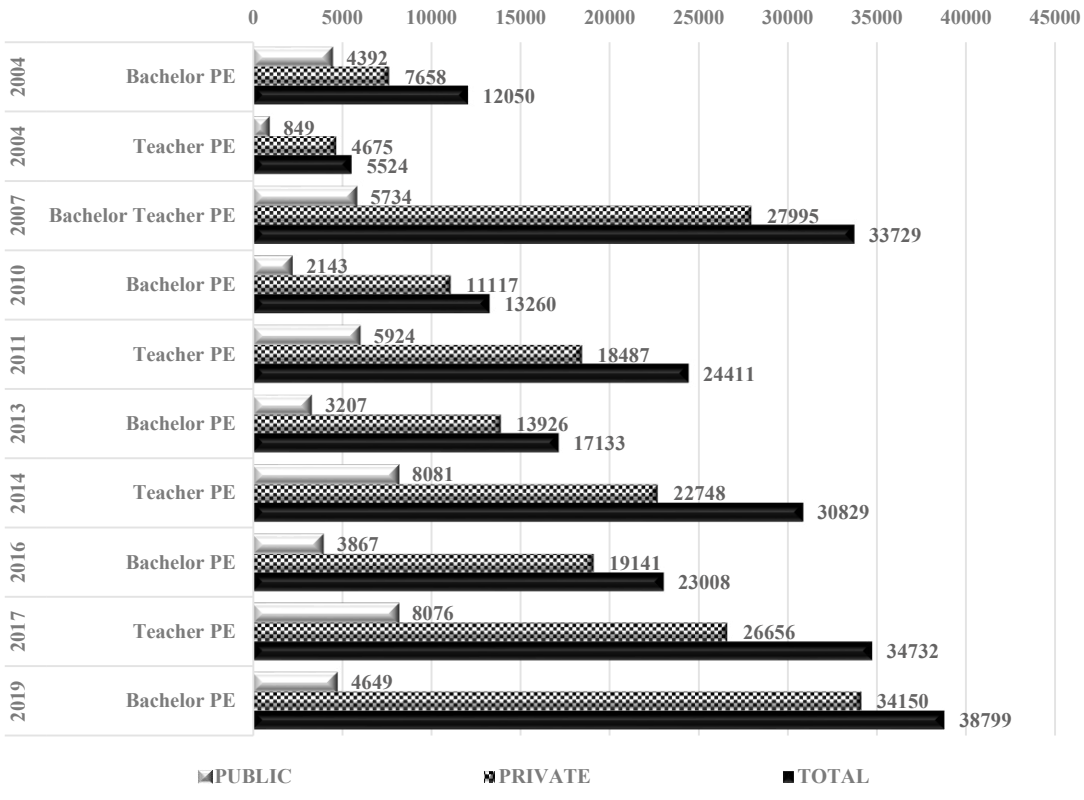

Figure 2. The number of Physical Education courses graduates turned into teachers or bachelor of Physical Education, categorized by administrative organization (NISR, 2004b, 2007, 2010, 2011, 2013, 2014, 2016, 2017, 2019).

education. However, over the years, it has become a primary means of gaining admission to higher education in the country (Azevedo, 2020). Many universities in Brazil use ENEM grades as a selection criterion, either as part of a single selection process or as a component of the candidate's final grade (NISR, 2024). Private higher education institutions in Brazil rely heavily on student tuition. Students' monthly fees vary depending on the institution's course, location, and reputation, and are set by the institution itself (Balbachevsky et al., 2019). To qualify for government student financing programs such as the Student Financing Fund (FIES) and the University for All Program (ProUni), private institutions also use the ENEM results as a criterion (Franco & Poz, 2018; Salto, 2018). Through these programs, the government subsidizes a portion of the tuition fees for financially disadvantaged students, while the institutions receive the corresponding amount directly from the government (Azevedo, 2020; Franco & Poz, 2018).

The Physical Education data can be compared to general data from all courses in Brazilian higher education. As per the Higher Education Census (NISR, 2021), which considers the entire educational structure, the number of courses nationwide in 2019 amounted to 43,085 (100%). As per the categorization implemented by NISR (2019, 2021), courses are arranged based on the administrative organization and are listed below:

- Total undergraduate courses in all areas: 26.5% in public institutions
- Total undergraduate courses in all areas: 73.5% in private institutions
- Physical Education undergraduate courses: 10.2% in public institutions
- Physical Education undergraduate courses: 89.8% in private institutions

Figure 3 shows the advancement of trained individuals, including Physical Education teachers and bachelors, classified according to their respective academic institutions.

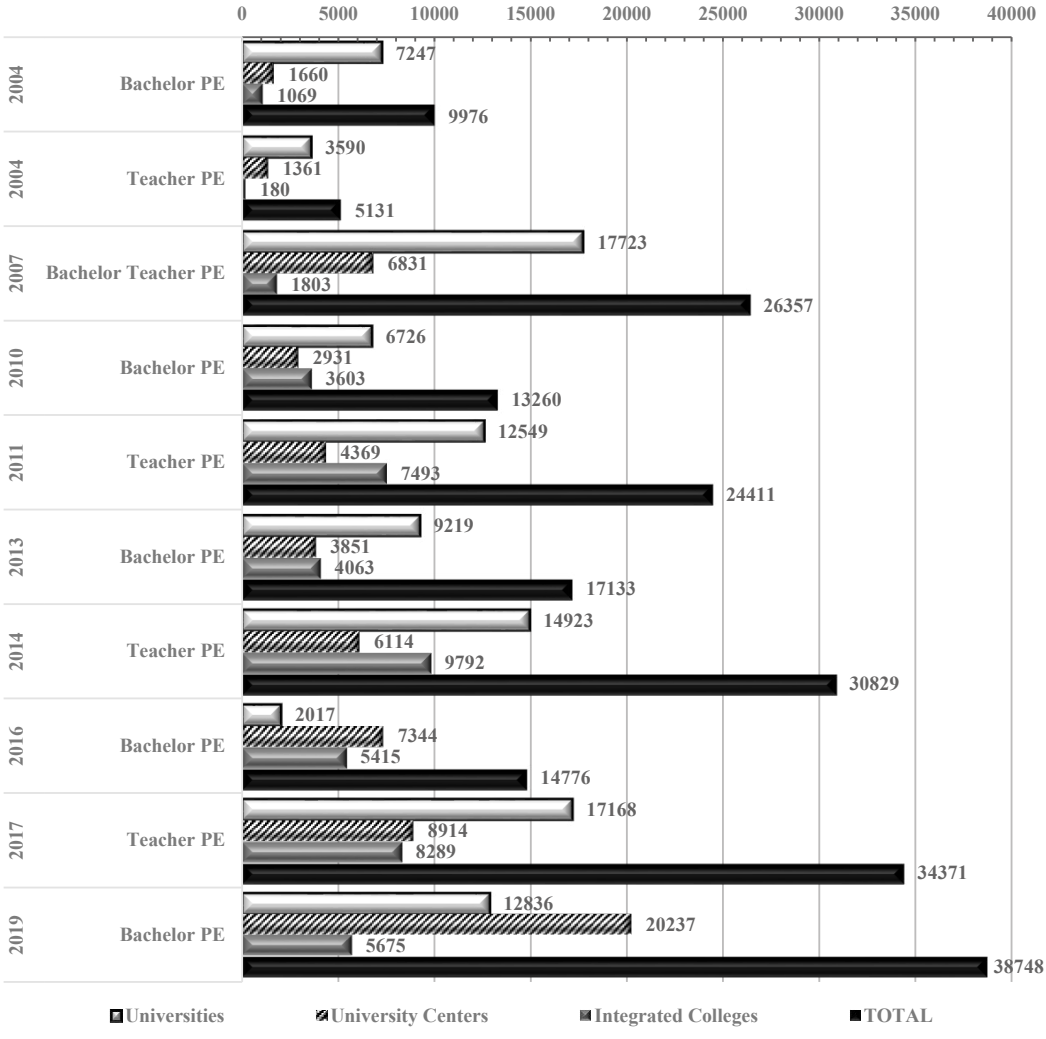

Figure 3. The number of Physical Education courses graduates turned into teachers or bachelor of Physical Education, categorized by academic organization (NISR, 2004b, 2007, 2010, 2011, 2013, 2014, 2016, 2017, 2019).

As Decree No. 5,773/06 outlined, HEIs in Brazil are categorized into three types: faculties, university centers, and universities. Universities are comprehensive institutions that integrate teaching, research, and extension activities. They provide higher education, conduct research, offer extension services, and contribute to advancing human knowledge. Universities must have at least one-third of their teaching staff holding a master's or doctoral degree, and one-third of the teaching staff should be employed full-time. University centers, on the other hand, focus on one or more areas of knowledge. They are recognized chiefly by the quality of their teaching, as demonstrated by the qualifications of their teaching staff and the academic working conditions provided to the school community. Accredited university centers have the autonomy to create, organize, and terminate higher education courses and programs at their headquarters. However, they do not have the same demands to offer courses and are not subject to the same criteria as universities (ME, 2024).

Based on academic organization, NISR (2019, 2021) categorized courses as listed below:

- Total number of courses: 40.6% in universities
- Total number of courses: 23.9% % in university centers
- Total number of courses: 31.2% % in integrated colleges
- Physical Education undergraduate courses: 31.7% in universities
- Physical Education undergraduate courses: 50.0% in university centers
- Physical Education undergraduate courses: 14.0% in integrated colleges

Table 1 presents data concerning the characteristics of students. Analyzing this information can enhance our comprehension and evaluation of the socioeconomic status of individuals who have successfully pursued higher education in Physical Education.

Table 1. Socio-demographic characteristics of individuals concluding Physical Education courses in Higher Education Institutions (NISR, 2004b, 2007, 2010, 2011, 2013, 2014, 2016, 2017, 2019).

Variable	2004	2007	2010	2011	2013	2014	2016	2017	2019
Gender									
Male (%)	54.4	55.0	54.3	54.2	57.6	54.4	60.8	56.9	63.7
Female (%)	45.6	45.0	45.7	45.8	42.4	45.6	39.2	43.1	36.3
Age (years)									
< 24 (%)	50.3	60.8	50.5	50.6	48.7	54.4	21.3	48.9	47.7
25 - 29 (%)	30.6	23.6	30.3	27.5	31.9	22.0	34.1	2.1	28.4
30 - 34 (%)	10.2	8.4	11.1	11.8	11.8	11.4	22.4	12.3	12.9
35 + (%)	8.9	7.2	8.1	10.1	7.6	12.2	22.2	11.7	11.0
Race/Skin color									
White	72.8	68.2	68.0	58.0	64.7	49.3	56.0	44.6	49.8
Black	4.6	7.4	8.1	10.4	7.7	12.9	10.2	13.2	12.1
Mixed-race	19.6	21.6	21.4	29.1	25.0	35.6	29.0	37.7	33.7
Asian	1.8	1.6	1.7	1.6	1.8	1.3	2.4	2.1	2.1
Indigenous	1.0	1.2	0.8	0.9	0.8	0.9	0.5	0.6	0.4
Do not want to declare	0.2	0	0	0	0	0	1.9	1.8	1.9
Monthly Family Income									
Up to 3 minimum wages	23.7	38.5	35.2	38.7	46.4	54.4	50.3	64.3	56.2
From 3 to 10 minimum wages	52.3	45.4	48.8	51.9	46.6	41.6	44.5	33.3	39.3
From 10 to 30 minimum wages	20.9	14.8	15.1	8.3	6.5	3.6	4.8	2.2	4
More than 30 minimum wages	2.3	1.3	0.9	1.1	0.5	0.4	0.4	0.2	0.5
Do not want to declare	0.8	0	0	0	0	0	0	0	0

The data reveals that male students are more prevalent across all studied periods, and this trend rose from 2017 to 2019. While most students are under 24 years old, the data shows a shift in this pattern in 2016, and students of all age groups are represented. Concerning race and ethnicity, the majority of the students are white, but the gap between other racial and ethnic groups, especially mixed-race students, has decreased. Lastly, the data indicates an increase in students whose families earn at least three minimum wages since 2004, surpassing students from all other income ranges, including those with higher incomes.

Discussion

This study analyzes government data on Physical Education courses in Brazilian HEIs, focusing on the period after Physical Education was recognized as a profession. The NISR reports revealed the expansion of educational programs in Brazilian tertiary education. Moreover, the reports provided insight into the characteristics of students enrolled in Physical Education during the assessment year. During the observed period, there was a significant increase in the number of Physical Education courses offered to teachers and bachelor's students, notably in the private sector. In the Brazilian educational landscape, tertiary education is characterized by diverse institutional models. Institutions of higher learning, namely universities, serve as training grounds for professionals and are renowned for their interdisciplinary educational approach that encompasses teaching, research, and extension (Cavalcante, 2000). Public universities possess a distinct legal status due to their association with the government. University centers are multidisciplinary institutions that cover one or more areas of knowledge. They aim to provide excellent teaching, opportunities for faculty professional development, and favorable academic working conditions. Integrated colleges specialize in a particular field of expertise or vocational education. Pursuing research has become a requirement exclusively at universities, deemed an elective at university centers, and regarded as non-obligatory for non-university institutions of Higher Education (Cavalcante, 2000). Universities remained the institution with the most Physical Education students, even though university centers showed an upward trend. At the end of the period, they surpassed universities in the number of students. The demographic composition of the student body encompasses a broad range of age groups and ethnicities. Notably, a substantial uptick was observed in the enrollment of students from lower-income households in HEIs. The data from this study suggest that professionalization in Physical Education, whether for teachers or bachelors, did not result in barriers for individuals from underprivileged backgrounds. In fact, according to the NISR (2021), the Physical Education course was one of the ten most significant undergraduate courses in terms of enrollment, with 239,008 students registered, surpassing courses such as Medicine, with 224,192 students registered and Civil Engineering with 205,736 students registered. Notably, the professionalization of Physical Education was not confined to high-performance sports, nor did it disregard the importance of grassroots sports and community-level coaching. This data suggests that the formal education of nearly 38,000 bachelors and 34,000 teachers per annum did not exclusively target high-performance sports. Recent academic literature produced in other countries has demonstrated how the scenarios are distinct, which points to the existence of sports coach developers (W In contrast to the pattern observed in higher education in general, Physical Education courses tend to be more widely available in university centers (NISR, 2019). This situation may impact the way bachelors and teachers perceive the development of scientific research within this field, compared to other fields where universities are more prevalent. This comparison highlights that private institutions dominate in offering undergraduate courses in Physical Education, more so than in other fields. Per the assessment of Pascuci and Fishlow (2023), some for-profit institutions could be perceived as centers that primarily focus on providing professional education and awarding certificates of knowledge acquisition to their students, irrespective of the domain of their study. However, these institutions seem to be falling short in imparting the requisite job skills highly sought after by employers, leading to frustration among graduates (Pascuci & Fishlow, 2023). Martins (2015) highlights the ongoing challenges associated with evaluating the quality of education in physical education, and addressing these challenges requires effort, including developing agreements with the academic community to ensure specific training and reforming management structures. Overcoming these challenges may necessitate investment in enhancing assessment processes and clarifying the concepts of courses among teachers.

In this particular time frame, it becomes relevant to account for an additional aspect, which concerns the data about specialized professional registration applications. These registrations are intended for individuals already employed within the field when legislation passed but lacked the necessary educational qualifications. The decline in requests for special registration for physical education professionals, from 4,289 in 2004 to 91 in 2015, suggests that strict monitoring and implementation of the law required many individuals to pursue undergraduate studies to meet the necessary qualifications (Martins, 2015).

Finally, it is worth mentioning other government data. The Brazilian National Education Plan has set a goal to ensure that all teachers in basic education obtain a spe-

cific level of training in higher education, which can be achieved through a degree in the area of knowledge in which they work (ME, 2014). The "Teacher Training Adequacy Indicator" has been developed to assess how teachers' initial training aligns with the disciplines they teach in schools. The scale for this indicator ranges from one to five. Individuals holding a teacher's degree or bachelor's degree with pedagogy complementation in the subject they teach in basic education are assigned to group one. According to this indicator, Physical Education teachers have shown the highest level of adequacy compared to other subjects in the mandatory curriculum (NISR, 2021). Below are some examples of coherence of areas for teacher education and disciplines they taught:

- Initial years of elementary school: Physical Education (80.7%); Portuguese Language (74.8%); Mathematics (72.0%);
- Final years of elementary school: Physical Education (74.4%); Portuguese Language (68.5%); History (67.7%);
- High school: Physical Education (85.2%); Biology (80.9%); Mathematics (78.9%);

Looking ahead, several strategic actions are necessary to advance the quality and equity of Physical Education in Brazil. Strengthening partnerships between higher education institutions and sports organizations can ensure that curricular content remains aligned with the realities of professional practice, particularly in sports coaching (Santos, 2019). Furthermore, enhancing national evaluation systems, such as the National Higher Education Assessment System (Brazil, 2004), with program-specific indicators can improve the consistency and quality of bachelor's degrees across institutions. Given the increasing enrollment of students from low-income and racially diverse backgrounds (NISR, 2019), public policies should continue to promote inclusive education through scholarships and academic support programs (Franco & Poz, 2018). Lastly, implementing a national system to monitor graduate outcomes and expanding continuing education opportunities, particularly in underserved regions, would contribute to a more qualified and regionally balanced workforce. These measures would help solidify the professionalization of Physical Education and ensure its sustained contribution to health, education, and sport in Brazilian society. Further research is needed to identify the career paths of physical education graduates, particularly those who work as sports coaches, and to gain insight into the specific job market for these professionals. There remains a pressing need for further research concerning the 672,683 professionals registered with the Federal Council of Physical Education (NCPE, 2025). Furthermore, it is imperative to recognize the substantial information embedded within course evaluation reports, which present a valuable repository of underutilized data (NISR, 2004b, 2007, 2010, 2011, 2013, 2014, 2016, 2017, 2019).

As the Brazilian context is very specific, it is difficult to compare with studies from other countries, even considering the proposal of the International Council for Coaching Education Standards for Higher Education Sport Coaching Bachelor Degrees (ICCE, 2016, 2023). This historical dataset is specific to Brazil and is not intended to serve as an international benchmark. Instead, it aims to contribute valuable insights to the ongoing discourse on the professionalization of coaches. According to the findings of Moustakas et al. (2021) in Europe and Nemeth et al. (2024) on a global level, there are significant discrepancies in the approach to the education of sports coaches. These differences encompass variations in program structure, content, duration, and the criteria used to evaluate qualifications. Moreover, the role of coach developers is prominent across various contexts. An analysis of the professional development pathways available to coach developers indicates a decentralized and experiential learning model. This model prioritizes informal methodologies, particularly through mentorship and community practices (Walton et al., 2024). Despite the distinct thematic emphases of these studies, both underscore the critical importance of integrating formal and informal learning processes to foster lifelong and adaptive growth within coach education. In the Brazilian context, legislation governing licentiate and bachelor's degrees in Physical Education accentuates the interrelationship between theoretical frameworks and practical application, alongside the principle of continuous learning during and after graduation (FCPE, 2002, 2015; Ministry of Education, 2004).

Therefore, it can be inferred that there is no unique agreed-upon format to address this challenge. It is essential to understand that the process of professionalization is complex and multifaceted, which can differ significantly across various sports, countries, and organizations. The coaching requirements and expectations can vary extensively based on the sport's popularity, funding, and organizational structures, and the degree of professionalization can differ accordingly (Barry, MacNamara, & Taylor, 2025; Lara-Bercial, 2017). It is also worth mentioning that, while limited to certain European countries, the academic literature has raised concerns about sports coaches adopting a more professional approach. Moreover, significant national data collection and management deficits severely limit the development of a clearer picture and diminish educational policymaking. This underscores the need to collect more data (Moustakas, 2021; Nemeth et al., 2024). Nevertheless, the European Commission's recognition of the size and significance of the coaching workforce in Europe clearly indicates the growing importance of sports coaching regulation and professionalization. This

recognition makes it a relevant topic for society, researchers, and policymakers alike (European Commission, 2020).

The results of this study reveal a surge in the demand for undergraduate courses in Physical Education within the Brazilian higher education system. As per the insights shared by Santos (2019), formal education imparted within HEIs and the courses offered by sports organizations has emerged as a crucial aspect of coaches' initial and ongoing education. Coaching expertise is developed through a combination of practical experience, knowledge, formal training programs, self-reflection, and life-long experiences, as described by Lara-Bercial el al. (2020). HEIs and sports organizations must work together cohesively to enhance the recognition and quality of coaching performance. A concerted effort towards collaboration is required to achieve this goal.

Sports confederations have the potential to offer valuable activities that can enhance the connection between higher education courses in the country and continuing education programs in sports. By promoting the integration of pedagogical projects of HEIs with projects for the professional development of coaches, sports institutions can facilitate better coordination between theory and practice, education, and professional performance. Given that higher education in Physical Education is a mandatory requirement in Brazil for those aspiring to work as a sports coach, it is recommended to increase the availability of unmediated learning opportunities that deepen the experiences of coaches in their daily activities. This approach would not only enhance the knowledge base of the coaches but also provide an avenue for the exploration of diverse perspectives and best practices in the field. This approach can offer a unique learning experience to those who have already received formal education (see Santos, 2019).

Ensuring equitable access to quality formal education poses a significant challenge in the Brazilian context, not only in the domains of Physical Education and Sports but across all fields. According to Pascuci and Fishlow (2023), a collective understanding of the challenges faced by HEIs can pave the way for innovative solutions to be identified and implemented. The higher education landscape has become increasingly competitive, with knowledge now recognized as a global commodity. In this intensely competitive arena, universities worldwide are under pressures to respond promptly and creatively to many new challenges. The inquiry at hand pertains to the inclusion of Physical Education and Sports in higher education and the classification of work in these fields as a profession. In the Brazilian case, one must question whether formal education benefited thousands of Physical Education students. Legitimizing a profession transcends mere legal recognition. It hinges on the professionalism of individuals and their capacity to leverage specialized knowledge to address societal challenges ethically and effectively. This entails utilizing scientifically based theories and methodologies and drawing upon various skills and abilities to make informed decisions in every circumstance. Differentiating the professional from the layperson is their ability to comprehend what, how, when, where, and why to intervene.

To maintain a constant evolution in the realm of higher education, it is imperative to identify all variables associated with this context. Doing so will enable us to make informed decisions to pursue quality in higher education. However, this process poses several challenges that require constant reflection and analysis. One of these challenges is the rapid expansion of courses and professionals in the field, which prompts us to ask about where this evolution is leading and its ultimate goals. It is crucial always to consider the common good and the services provided to society in this respect.

As ICCE (2016) notes, it is important to recognize that the coaching profession is constantly evolving. Coaching degrees and their graduates must adapt and evolve to meet the needs of various stakeholders, which include athletes, government ministries and departments, coaching agencies, national and international federations, HEIs, clubs, and coaches' associations. It is crucial to remain mindful of these considerations as sports move forward. Finally, it is important to take into account this study's limitations. Notably, the professionalization of physical education in Brazil is unique, which precludes any meaningful comparison with the international scenario. Additionally, it is worth noting that the reports compiled by NISR (2004b, 2007, 2010, 2011, 2013, 2014, 2016, 2017, 2019) contain a wealth of data beyond what was analyzed in this study. Attempting to include all available data within the scope of a single study would be an unfeasible task.

Conclusion

This study analyzes official data on Physical Education in Brazilian HEIs, specifically focusing on the period since this field established itself as a professional occupation. The analysis reveals a substantial increase in the number of Physical Education courses offered, particularly in the private sector. During the observed period, both teachers and bachelor's students had access to a wider range of Physical Education courses. Although universities remained the primary institution for Physical Education students, university centers showed an upward trend and surpassed universities in terms of the number of students at the end of the period. The student body was diverse in terms of age groups and ethnicities, with a significant increase in the enrollment of students from lower-income households. The data indicate that professionalization in Physical Education did not generate socioeconomic

barriers for underprivileged individuals. Further research utilizing available government data could contribute to the global discourse on the professionalization of sports coaches and the area of Physical Education, particularly given the magnitude of the numbers reported in official documents and the fact that this process took place in Brazil over twenty years ago.

Ethics Approval and Informed Consent

This study used a methodology that analyzed secondary data sourced from publicly accessible governmental records. Given that it did not involve the direct participation of either individuals or animals, relevant ethical guidelines considered the submission to a research ethics committee unnecessary.

Competing Interests

The authors declare that they have no conflicts of interest related to this study's development, conduct, or publication.

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