



Article

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## Physical Education courses in Brazil: data consolidation from 1995 to 2020

Cursos de Educação Física no Brasil: consolidação de dados de 1995 a 2020

Cursos de Educación Física en Brasil: consolidación de datos de 1995 a 2020

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**Abstract:** The article aims to consolidate data on physical education (PE) training in Brazil from 1995 to 2020. It analyzed the main sources available on these data as well as those used by the scientific literature in the field of PE and built indicators for data extraction establishing as a database the Statistical Synopses of Higher Education, of the National Institute of Educational Studies and Research Anísio Teixeira. The results indicate a significant discrepancy between the data from the Statistical Synopses and those from the literature, since a significant portion of the articles that present data on PE courses contain methodological problems, by not indicating the sources, procedures and not using adequate filters to determine the data found. There was an expansion of training in PE in the period, which in 2020 had a higher number of enrollments in distance learning (DL) courses and bachelor's degree programs courses become the majority from 2019. With the creation of distance courses, only the indicator of the number of courses is not the most appropriate to analyze the growth of training, which should be combined with others such as modality, enrollment, and graduation. Since the beginning of the elaboration of the Statistical Synopsis, in 1995, the number of courses and their indicators were increasing, but in 2017 the number of courses and enrollments began to decrease, which may indicate a saturation in the demand for training in PE.

**Keywords:** statistical synopsis; physical education; courses.

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**Resumo:** O artigo tem como objetivo consolidar dados referentes à formação em Educação Física (EF) no Brasil no período de 1995 a 2020. Para essa análise, foram utilizadas as principais fontes disponíveis sobre esses dados, tanto na literatura científica sobre Educação Física, quanto nas Sinopses Estatísticas da Educação Superior fornecidas pelo Instituto Nacional de Estudos e Pesquisas Educacionais Anísio Teixeira (INEP). Os resultados, indicam discrepância significativa entre os dados das Sinopses Estatísticas com os dados encontrados na literatura disponível, evidenciando problemas metodológicos, em uma parcela considerável dos artigos que tratam dos cursos de EF. Estes artigos omitem fontes, procedimentos e não utilizam filtros adequados na obtenção de dados. Durante o período analisado, houve expansão da formação em Educação Física, especialmente no ano de 2020, quando o número de matrículas em cursos à distância se sobressaiu e a predominância dos cursos de bacharelado, que se tornou maioria a partir de 2019. A criação dos cursos à distância, demanda revisão dos indicadores de crescimento da formação em EF, os quais devem considerar o número de cursos, a modalidade, as matrículas e os concluintes. Apesar do crescimento constante nos indicadores desde o início da elaboração da Sinopse Estatística em 1995, houve uma diminuição no número de cursos e matrículas a partir de 2017, sugerindo um possível saturamento na procura por formação em Educação Física.

**Palavras-chaves:** sinopses estatísticas; educação física; cursos.

**Resumen:** Tiene como objetivo consolidar los datos sobre el entrenamiento en educación física en Brasil, en el intervalo de tiempo entre 1995 y 2020. Se analizaron las principales fuentes disponibles sobre estos datos, así como las utilizadas por la literatura científica en el campo de la Educación Física, y se construyeron indicadores para la extracción de datos estableciendo como base de datos las Sinopsis Estadísticas de la Educación Superior, del Instituto Nacional de Estudios e Investigaciones Educativas Anísio Teixeira. Los resultados indican discrepancia significativa entre los datos de las Sinopsis Estadísticas y los de la literatura, ya que una parte significativa de los artículos que presentan datos sobre los cursos contienen problemas metodológicos, al no indicar las fuentes, procedimientos y no utilizar filtros adecuados para determinar los datos encontrados. Hubo una expansión de la formación en Educación Física en el período, que en 2020 tuvo un mayor número de matrículas en cursos de educación a distancia y los cursos de licenciatura se convirtieron en la mayoría a partir de 2019. Con la creación de cursos a distancia, solo el indicador del número de cursos no es el más adecuado para analizar el crecimiento de la formación, que debe combinarse con otros como modalidad, matrícula y graduación. Desde el inicio de la elaboración de la Sinopsis Estadística, el número de cursos y sus indicadores fueron aumentando, pero en 2017 el número de graduados e inscripciones comenzó a disminuir, lo que puede indicar una saturación en la demanda de formación en Educación Física.

**Palabras clave:** sinopsis estadística; educación física; cursos.

## 1 Introduction

In the academic sphere, whether involved in shaping new undergraduate and postgraduate students or actively participating in curriculum changes and research on Physical Education (PE) training, we have encountered challenges in understanding the quantity of existing PE courses. This is attributed to diverse sources of data, legislative alterations, publication of research results with unclear methodologies, and inaccuracies in the extraction and treatment of this information.

This complexity hinders the assessment and sizing of existing PE courses, raising questions about the scientific rigor of the data. This scrutiny is crucial for the advancement of scientific activities. Given this scenario, the academic and scientific community faces challenges in conducting analyses on the actual growth, development, and progress of these courses based on reliable information. Consequently, there is a difficulty in contributing to the formulation of public policies and the advancement of knowledge in this field.

To comprehend the magnitude of the challenges faced, research inquiring about the quantity of PE courses has utilized distinct data sources. Among these sources are the National Registry of Courses and Higher Education Institutions (e-MEC) (Martins; Tostes; Mello, 2018), the National Curriculum Guidelines for Undergraduate Courses in Physical Education (DCNCGEF) (Taffarel; Lacks; Santos Júnior, 2006), and the National System of Higher Education Assessment (SINAES) (Silva *et al.*, 2009).

Moreover, some studies have relied on others to substantiate information regarding the quantity of courses (Almeida; Montagner; Gutierrez, 2009; Farret; Terra; Figueiredo, 2016; Reis; Castellani, 2012). Additionally, there are instances where the source indicating the quantity was not specified (Castellani Filho, 2016; Daolio, 1998; Faria Junior, 2001; Taffarel *et al.*, 2006). Ultimately, in the majority of studies, there is a tendency to utilize data from the National Institute of Educational Studies and Research Anísio Teixeira (INEP), which appears to be, thus far, the most commonly used data source in research endeavors (Martins; Tostes; Mello, 2018; Nunes *et al.*, 2017; Pimentel *et al.*, 2013; Tucunduva; Bortoleto, 2019).

This lack of precision in numbers is evident even in the language of texts intending to infer the number of courses. Terms such as "approximately," "more than," and "around" are frequently employed to refer to these quantities (Almeida; Montagner; Gutierrez, 2009; Castellani Filho, 2016; Daolio, 1998; Farret; Terra; Figueiredo, 2016; Nunes *et al.*, 2017; Taffarel *et al.*, 2006; Taffarel; Lacks; Santos Júnior, 2006; Tucunduva; Bortoleto, 2019). This approach is adopted to avoid making definitive statements and to sidestep the presentation of imprecise data. Addressing this linguistic nuance is essential for enhancing the clarity and reliability of information presented in studies related to the quantity of PE courses.

Within this intricate situation, various problems and concerns arise, given the diverse sources and methods used to extract the quantity of existing PE courses. Questions emerge, such as: What is the number of operational PE courses in a particular year? Furthermore, is there a reliable foundation for identifying this number? If such a foundation exists, how should this data be extracted to minimize the margin of errors?

In this context, beyond the studies previously mentioned that, at some point in the text, indicated the quantity of PE courses in Brazil, there are two studies that aimed to provide more precise data regarding this quantity. These studies identified, over a specific time interval, the number of PE courses. Interestingly, both studies utilized the National Institute of Educational Studies and Research Anísio Teixeira (INEP) as the database for their findings and analyses.

The first study aimed to analyze the trajectory of PE courses in Brazil between 2000 and 2006 (Collet *et al.*, 2009). This study concluded that in the early years of the 21st century, teacher training programs still predominated, despite an expansion of bachelor's degree programs, especially in private institutions. On the other hand, the second study aimed to present considerations about the expansion scenario of PE in the context of Brazilian higher education between 1991 and 2015 (Broch *et al.*, 2020). The results of these studies indicated an increase in the number of PE courses, with this growth being more significant in the private sector.

In light of the context presented, this research emerges, distinguishing itself from the two previous studies by encompassing a more extended time frame compared to Collet *et al.* study (2009). Additionally, it adds analytical data that Collet *et al.* (2009) and Broch *et al.* (2020) did not analyze. The aim is to consolidate data on PE training in Brazil between 1995 and 2020, presenting indicators such as the total number of PE courses, the mode of instruction (in-person or Distance Learning (DL), enrollment and graduation figures, the type of training (teacher training programs and bachelor's degree programs), and the administrative category of the institution (public and private).

## 2 Methodology

There are several sources available for collecting data on the number of PE courses. However, the predominantly used source in research is INEP. This is because INEP's Statistical Synopses are prepared based on information collected by the Higher Education Census, which is "the most comprehensive research instrument in Brazil regarding Higher Education Institutions (HEI) that offer undergraduate and specific training sequential courses, as well as their students and faculty" (INEP, 2020). This instrument aims to "provide the academic community and society in general with detailed information about the situation and major trends in the sector" (INEP, 2020), making it

the most comprehensive data source that provides the greatest amount of information about undergraduate courses and their characteristics in Brazil.

Following the data source selection process, the methodology adopted in this work involved analyzing the Statistical Synopses of Higher Education - Undergraduate, provided by INEP, which disseminate official data on Higher Education in Brazil from 1995 onwards. The data were collected from the files made available on the institution's website (INEP, 2023).

The file acquisition process involved accessing the website and downloading all files corresponding to the selected years for analysis, from 1995 to 2020. Within these documents, we sought indicators that addressed: a) changes in document structure; b) number of PE courses; c) teaching modalities: in-person and DL; d) students: enrollments and graduates; e) types of training: teaching and bachelor's degrees; f) nature of institutions: public and private.

Following this stage, we developed indicators to guide future searches in the Statistical Synopses. This involved accessing the files for each year of the synopses, conducting a detailed study of their structure, and organizing the information they contained. Two researchers were assigned the task of analyzing the synopses to identify data related to the number of PE courses and gather additional information for analysis. Each researcher was responsible for noting the data collection points (specific spreadsheets, pages, course names within the document's organizational structure) and extracting relevant information, which was compiled in Excel® workbooks.

Subsequently, the researchers compared the extracted data to identify possible divergences. These discrepancies were discussed with another pair of researchers and a supervising researcher to establish criteria for their resolution.

After resolving the identified discrepancies, we proceeded with compiling the data for this article. These data include the number of PE courses per year, the mode of instruction (in-person or DL); enrollment and graduation figures; types of training (teacher training programs and bachelor's degree programs); and the administrative category of HEI (public and private).

### 3 Presentation and discussion of data on Physical Education courses according to INEP

We observed that it is not possible to indicate a single method for extracting the data of interest from the spreadsheets. Over time, these documents underwent modifications, expansions, and the addition of new elements, such as cover pages, tables of contents, and summaries, allowing for greater "organization" of the data. For example, when comparing the first available Statistical Synopsis in 1995 with that of 2020, we noticed changes in the "Detailed Area" and "Course Type" where the data on PE were located. The same occurred in other years.

In the Statistical Synopsis of the year 1995, the PE courses are classified solely in the "Area of Knowledge of Health Sciences," similar to the classification of areas by the Coordination for the Improvement of Higher Education Personnel (CAPES). Additionally, data regarding the administrative category should be located in separate spreadsheets and summed separately.

In the 2020 Statistical Synopsis, the data for PE courses are distributed across two distinct areas: a) General Education Area; b) General Health and Well-Being Area. These areas further break down into detailed areas such as "Teacher education in specific areas (except Letters)" and "Promotion, prevention, therapy, and rehabilitation," which had the Course Type terms "PE teacher education" and "PE," respectively. It's important to note that this change is not only in the way data is organized but also reflects the evolution and complexity of Higher Education in Brazil over time.

The nomenclature used to refer to courses is indeed quite varied, as are the types of courses found. In this regard, we observed that courses had different names over the years, even though the term "PE" corresponded to the majority of undergraduate courses. Different nomenclatures were used to designate courses in the fields of health and education. For this study, we delimited PE courses based on Resolutions and National Curriculum Guidelines for the field of PE and National Curriculum Guidelines for Teacher Education (Metzner; Drigo, 2021).

From the courses identified in Table 1, we examined in each Statistical Synopsis the overall number based on the administrative category of the HEI offering them and the course modality. We chose to exclude courses such as "Sports Technicians and Coaches Training," "Sports and Leisure Management," "Gymnastics," "Recreation and Leisure," "Physical Training (Sports)," "Leisure, Recreation, and Events," "Technology and Leisure Management".

**Table 1** - Nomenclatures used by INEP's Statistical Synopses to designate Physical Education courses

Course Name/Year	Physical Education	Physical Education Teacher Education	Physical Education Teacher Training	Physical Education Teacher Training for Basic Education
1995				
1996				
1997				
1998				
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2014				
2015				
2016				
2017				
2018				
2019				
2020				

Source: Adapted from: INEP (2023).

After overcoming methodological challenges in selecting the INEP database and determining data extraction methods, we present Table 1, which displays the quantity of PE courses per year, modalities, enrollments, graduates, degree, and administrative category. When delineating between teacher training programs and bachelor's degree programs, we observed that in the spreadsheets from 1995 to 1999, all PE courses were listed under the Area of Knowledge of Health Sciences, making it impossible to infer the degree of the course. Only in the spreadsheets from the year 2000 onwards was there a division between courses in the General Education Area, which are teacher training programs, and those in the General Health and Social Well-Being Area, which are bachelor's degree programs courses.

Table 1 - Quantity of Physical Education courses, enrollments, and graduates, according to modality, degree, and administrative category of Higher Education Institutions (HEI) from 1995 to 2020

Year	Total courses	Modality		Enrollment		Graduates			Academic degree		Administrative category of the HEI		
		In Person	DL	In Person	DL	Total	In Person	DL	Total	Bachelor's degree programs	Teacher training programs	Public	Private
1995	140	140	0	40.484	0	40.484	5.375	0	5.375	-*	-*	69	71
1996	152	152	0	44.785	0	44.785	5.662	0	5.662	-*	-*	76	76
1997	153	153	0	45.244	0	45.244	6.206	0	6.206	-*	-*	76	77
1998	166	166	0	50.468	0	50.468	6.480	0	6.480	-*	-*	78	88
1999	209	209	0	57.639	0	57.639	7.213	0	7.213	-*	-*	84	125
2000	265	265	0	69.317	0	69.317	8.217	0	8.217	175	90	108	157
2001	295	295	0	79.634	0	79.634	8.283	0	8.283	178	117	114	181
2002	359	359	0	96.830	0	96.830	11.279	0	11.279	208	151	130	229
2003	410	410	0	116.250	0	116.250	14.494	0	14.494	228	182	145	265
2004	467	467	0	136.232	0	136.232	17.213	0	17.213	271	196	156	311
2005	529	529	0	159.114	0	159.114	21.156	0	21.156	341	188	157	372
2006	613	612	1	171.987	0	171.987	25.823	0	25.823	389	224	185	428
2007	692	688	4	183.314	144	183.458	30.670	0	30.670	412	280	181	511
2008	781	761	20	184.957	1.543	186.500	35.941	0	35.941	430	351	218	563
2009	831	809	22	162.604	2.320	164.924	35.306	48	35.354	434	397	232	599
2010	995	970	25	172.456	3.009	175.465	32.984	92	33.076	644	351	271	724
2011	1.058	1.030	28	176.430	4.976	181.406	34.263	194	34.457	663	395	293	765
2012	1.099	1.067	32	179.500	6.776	186.276	34.286	498	34.784	679	420	327	772
2013	1.078	1.062	16	186.696	6.778	193.474	29.269	705	29.974	645	433	292	786
2014	1.126	1.108	18	210.350	27.877	238.227	30.205	974	31.179	672	454	311	815
2015	1.160	1.140	20	228.812	46.285	275.097	35.032	1428	36.460	681	479	293	867
2016	1.218	1.184	34	233.332	71.670	305.002	36.626	2475	39.101	683	535	283	935
2017	1.310	1.267	43	237.993	95.969	333.962	41.356	14031	55.387	698	612	272	1.038
2018	1.425	1.346	79	227.750	130.551	358.301	43.523	16229	59.752	728	697	276	1.149
2019	1.511	1.400	111	209.904	166.313	376.983	37.810	20040	57.945	739	772	266	1.245
2020	1.582	1.413	169	179.141	191.568	370.709	32.615	18041	50.656	757	825	269	1.313

Note: \*Data not available.

Source: Adapted from: INEP (2023).

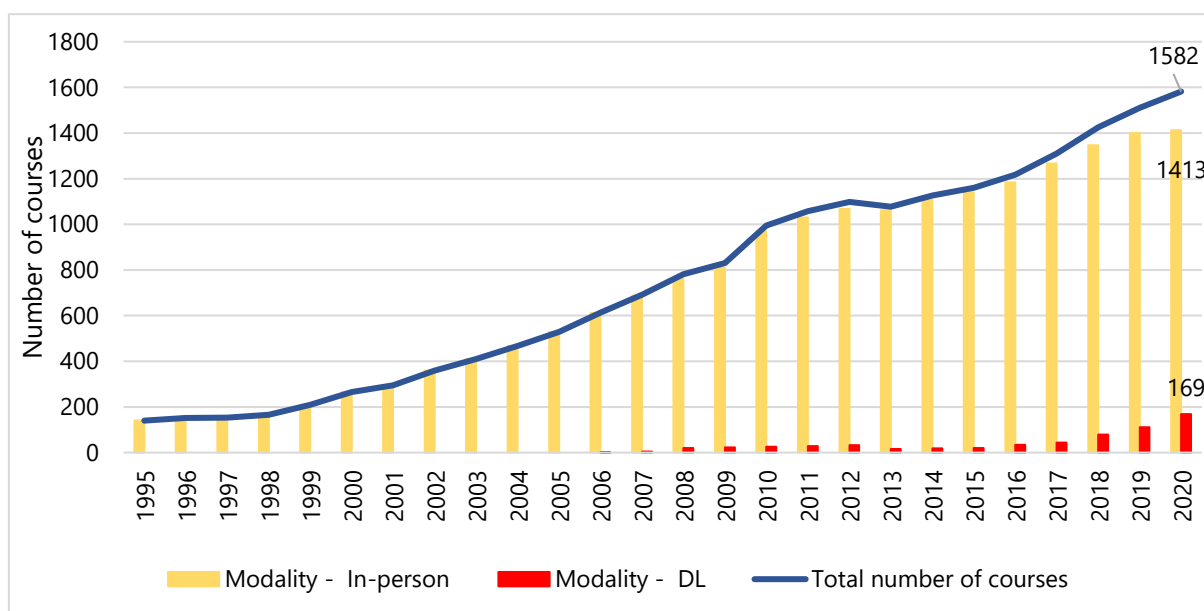




### 3.1 Number of courses, enrollments and graduates according to teaching modalities

Based on the data from Table 1, we observe that from 1995 to 2020, there was an increase in the number of PE courses, especially those offered by private educational institutions. As illustrated in Chart 1 and 2, the majority of courses are still offered in the in-person modality, despite the growth in the offering of DL courses. It's important to note that the number of DL courses is different from the number of centers (polos) for these courses, as a single DL course can be replicated in various centers.

Chart 1 - Evolution of the number of Physical Education courses from 1995 to 2020, according to the teaching modality



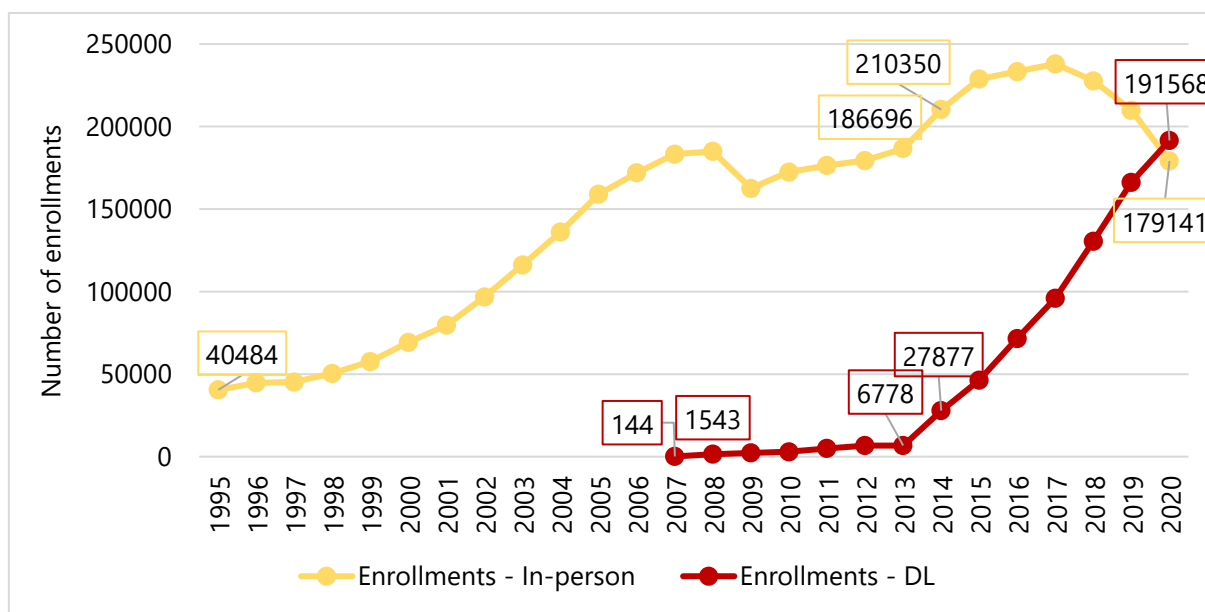
Source: Adapted from: INEP (2023).

The literature has been pointing out the significant growth of PE courses (Broch *et al.*, 2020; Pimentel *et al.*, 2013; Silva *et al.*, 2009), and the data from Table 1 and Chart 1 confirm this growth, jumping from 140 in the year 1995 to 1,582 in the year 2020. We also observe the emergence of new courses in the distance learning modality from the year 2006, as a way to consolidate public policies for the expansion of higher education in this modality through the Open University of Brazil (OUB) system (Pimentel *et al.*, 2013).

Regarding the analysis of the number of courses, we identified discrepancies when comparing the quantities obtained following the methodology of this article and the studies published previously. For example, in the year 2007, Taffarel, Lacks, and Santos Júnior (2006) indicated the existence of approximately 650 courses, while Silva *et al.* (2009) mentioned 1,031, and our consolidated data points to 692 courses. On the other hand, Castellani Filho (2016) stated that in 2016 there were more than 1,400 courses, and we found 1,218.

The growth in the number of courses led to an increase in enrollments, as shown in Chart 2, as well as an increase in graduates, demonstrated in Chart 3. However, the participation of DL courses in this quantity is noteworthy. Despite having a smaller number of courses compared to in-person courses, there is a growth in the percentage of enrollments and graduates in distance learning modalities. In contrast, in-person modalities had a less pronounced growth curve, facing a decline from 2018.

Chart 2 - Evolution of the number of enrollments in Physical Education courses from 1995 to 2020, according to the teaching modality

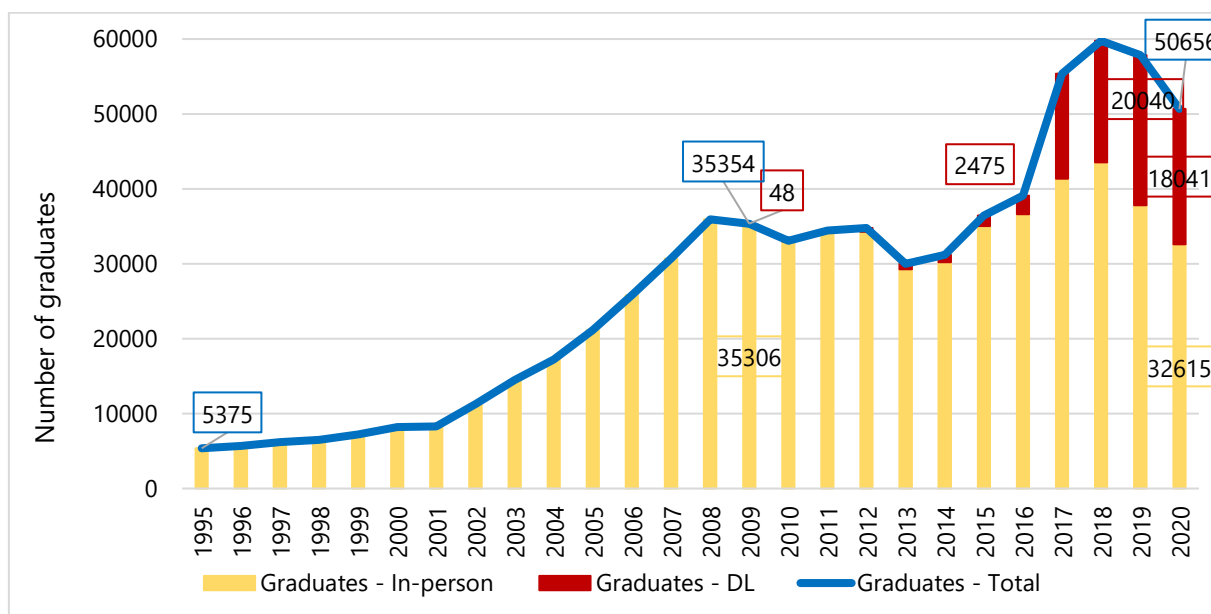


Source: Adapted from: INEP (2023).

We highlight that until the year 2006, all PE courses were offered in the in-person modality, as DL courses registered their first enrollments (144) only in 2007. However, by 2008, there were 1,543 enrollments in DL, representing exponential growth in a short period. The year 2014 marked a significant change in the enrollment growth curve in both modalities, with a greater impact on DL, which went from 6,778 enrollments in 2013 to 27,877 in 2014, without a proportional increase in the number of courses (16 in 2013, 18 in 2014). In 2020, for the first time, the number of enrollments in distance learning courses (191,568; 51.7%) surpassed the number of enrollments in-person courses (179,141; 48.3%). These data demonstrate a significant change in the scenario, as in the year 2011, the 28 DL modality PE courses represented 2.74% (4,976) of the 181,406 enrollments (Pimentel *et al.*, 2013).

The impact of this growth is evident in Chart 3, with an increase in the number of graduates over the period, despite fluctuations such as from 2007 to 2011, 2012 to 2016, and a decline observed from 2018. This reduction is mostly related to graduates from in-person courses, as DL courses had observed growth from the first graduates in 2009 (49) to their peak in 2019 (20,040), with a slight decline in 2020 (18,041).

Chart 3 - Evolution of the number of graduates from Physical Education courses from 1995 to 2020, according to the teaching modality



Source: Adapted from: INEP (2023).

In the available literature, we find few studies on enrollment and graduation numbers, and, in general, all indicate growth in these indicators (Broch *et al.*, 2020; Collet *et al.*, 2009; Martins; Tostes; Mello, 2018; Pimentel *et al.*, 2013). However, we notice new discrepancies in relation to the values found in this research. Collet *et al.* (2009) provided data on enrollment and graduates for the years 2000 (27,383 enrollments and around 10,000 graduates) and 2006 (59,586 enrollments and 27,093 graduates). The data we consolidated indicates that in the year 2000, there were 69,317 enrollments and 8,217 graduates, and in 2006, there were 171,987 enrollments and 25,823 graduates. Broch *et al.* (2020), analyzing only enrollments in-person courses, indicated 40,484 in 1995; 159,484 in 2005 and 228,212 in 2015. Of these presented values, only the year 2005 does not correspond to the values found in this research, with 159,114 enrollments.

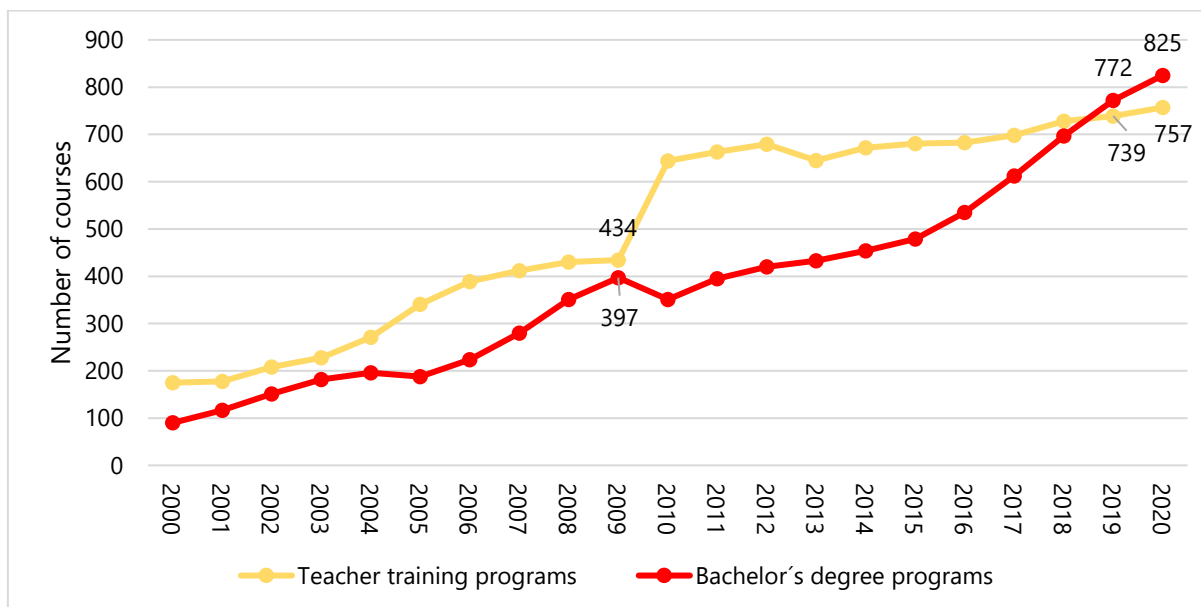
The comparison between the two modalities highlights that distance learning enables a greater number of enrollments and graduates per course than in-person courses. Among the various reasons, this can be attributed to the possibility of allocating a larger number of students to various centers distributed geographically, who can access the courses through the internet or semi-presential classes.

### **3.2 Academic degree: teacher training programs and bachelor's degree programs**

As various laws and regulations that regulated PE promoted significant changes in the configuration of this profession. Resolution CFE no. 03/1987 established the possibility of two distinct formations: bachelor's and/or teaching degree. Subsequently, resolutions no. 07/2004; no. 07/2009; no. 02/2015, and no. 06/2018, among other standardizations, defined criteria and reorganized the formation in PE, solidifying this dual formative possibility (Metzner; Drigo, 2021).

The data show changes in the dynamics between teacher training programs and bachelor's degree programs, as illustrated in Chart 4, at least in the indicators related to the growth in the number of courses in each degree. It is observed that both maintain a growth rate over the years, although in 2010, teacher training programs (644) had a higher growth compared to 2009 (434), in an opposite movement to the bachelor's degree, which experienced a decrease from 397 courses in 2009 to 351 in 2010.

Chart 4 - Evolution of the number of Physical Education courses from 1995 to 2020, according to the academic degree



Source: Adapted from: INEP (2023).

From 2011 onwards, to some extent, there was a disparity in the creation/emergence of courses for each degree, a process influenced by economic factors and the demands of the PE job market, whether in formal education or in health and leisure spaces, which experienced significant growth in the 1990s and 2000s (Fonseca; Souza Neto, 2020; Proni, 2010), requiring specific and specialized training.

It is noteworthy that in 2019, the number of bachelor's degree programs (772) surpassed that of teacher training programs (739), and this trend continued the following year, an unprecedented process in the period of this study. This data contrasts with the findings of Collet *et al.* (2009), which indicated teacher training programs as the predominant formation among PE courses in the years 2000 to 2006. This predominance occurred in part due to the short period since the creation of bachelor's degree courses, although at the time there was already a trend towards balance in the number of graduates.

In this context, the substantial growth of bachelor's degree courses is associated with the expansion of economic activities related to physical practices outside the school environment, which is the domain of the PE bachelor (Fonseca; Souza Neto, 2020). This scenario would drive the creation of these courses to meet market demand for the provision of specialized services in sports and health areas (Broch *et al.*, 2020).

On the other hand, the low attractiveness of teaching as a professional activity (Cericato, 2016), the growing devaluation of the teaching career in basic education (Gomes; Cruz, 2023), associated with the perception that work in schools is precarious, are elements that may have contributed to this change, although such characteristics can be identified outside the work environment in schools (Furtado; Santiago, 2015).

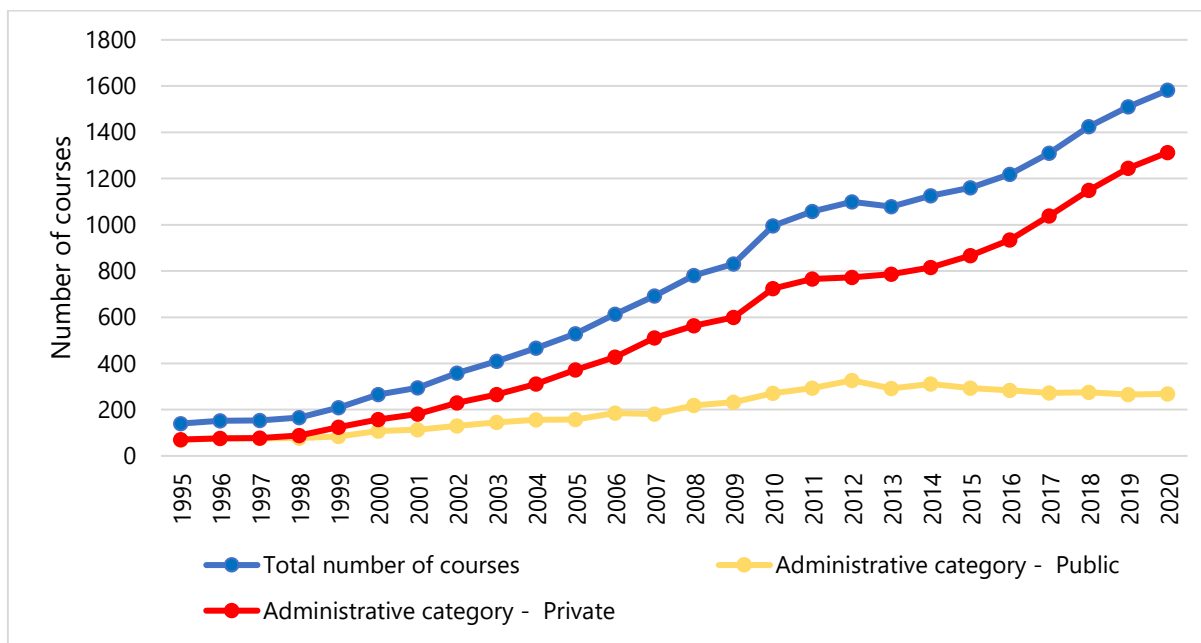
When comparing the data obtained in this research with other studies that address the same indicators, we notice new divergences among the data. For example, Martins, Tostes, Mello (2018) indicated that in 2017 there were 752 teacher training programs, while our data indicate 698 courses for the same period. Nunes *et al.* (2017) stated that in 2014 there were 654 teacher training programs and 462 bachelor's degree programs, both in the in-person modality, while our data indicate 655 and 453 courses respectively. Collet *et al.* (2009) indicated that in 2000 there were 220 teacher training programs and 94 bachelor's degree programs, and in 2006 there were 510 teacher training programs and 232 bachelor's degree programs. However, once again, our data differ, as for the year 2000, we found 175 teacher training programs and 90 bachelor's degree programs, and in 2006, 389 teacher training programs and 224 bachelor's degree programs.

### 3.3 Administrative category of institutions: public and private

The analyzed period demonstrates an expansion in the offering of PE courses, concentrated in private HEI. As shown in Chart 05, the initial balance in the distribution of courses did not persist, as the quantity of courses in private HEI grew significantly, going from 71 courses in 1995 to 1,313 in the year 2020, the highest value recorded in the period, while in public HEI, the numbers evolved in smaller proportions, with 69 courses in 1995 and 269 in 2020.

It is also noteworthy that the peak of the number of courses offered by public HEI occurred in the year 2012, with 327 courses, facing a decline in numbers in the following years. This variation may be related to the implementation period of the Program for Support to Plans for Restructuring and Expansion of Federal Universities (Reuni), which was implemented in 2008, and its effects could be observed in the subsequent years (Carvalho; Oliveira, 2022).

Chart 5 – Evolution of the number of Physical Education courses in the period 1995-2020, according to the administrative category of higher education institutions (HEI)



Source: Adapted from: INEP (2023).

Other studies also presented indicators about courses offered in public and private HEI (Collet *et al.*, 2009; Nunes *et al.*, 2017; Reis; Castellani, 2012). However, only the study by Pimentel *et al.* (2013) provided data that corresponded to the findings of this research, for the year 2011, with 293 courses in public HEI and 765 courses in private HEI.

The expansion of higher education in Brazil is a reflection of political and economic actions dating back to the second half of the 20th century, aiming at modernizing education and addressing the need for higher education in the country (Broch; Breschiliare; Barbosa-Rinaldi, 2020; Queiroz *et al.*, 2013; Schwartzman, 2022). The University Reform of 1968 had an impact on this process, with one of the consequences being the multiplication of small private institutions in the 1960s and 1970s (Queiroz *et al.*, 2013). However, it was in the 1990s that there was greater alignment between actions focused on higher education and the neoliberal economic model, leading to the proliferation of private HEI and the relaxation of conditions allowing the emergence of institutions such as university centers, colleges, higher schools, which can offer courses at the higher education level but are not obligated to engage in research and extension, functions inseparable from universities (Broch; Breschiliare; Barbosa-Rinaldi, 2020).

In this sense, our data corroborate Broch *et al.* (2020) perception of the mismatch in the provision of courses in Brazilian higher education, predominantly concentrated in the private sector, which has gained space in the educational organization as an economic activity and primarily serves the demands of the labor market and business logic.

## 4 Final considerations

The consolidation of data from the INEP Statistical Synopses on PE training from 1995 to 2020 confirms the expansion process of these courses, as seen in the enrollment and graduate numbers, the increased presence of DL in education, and the growth and predominance of bachelor's degree programs. Private HEI hold the majority of these numbers. This implies that relying solely on the number of courses, often used to assess the growth and development of PE education, is becoming insufficient. With the introduction of DL, a course can have many branches geographically spread, consequently attracting a larger number of students. Therefore, we recommend combining analyses with data on enrollments, graduates, and other variables present in the Statistical Synopses.

It is emphasized that the INEP Statistical Synopses have evolved and become more complex, making data extraction challenging for researchers. This necessitated meticulous analytical care year by year. This, coupled with the diversity of available data sources, may explain the discrepancies between the data found in the literature and what was consolidated in this research. In other words, other data sources that allow inferences about the number of PE courses have limitations that prevent the retrieval of precise data on the subject. For example, we can mention the e-MEC, which does not allow a temporally delimited study and provides information about authorized courses that may not necessarily be in operation.

These analyses allow us to state that the observed expansion is facing a period of stagnation. In 2017, the number of courses and enrollments began to decrease, indicating a possible saturation in the demand for PE. This is more noticeable in the teacher training programs, which lost formative space compared to the bachelor's degree programs.

Therefore, new studies are needed to continue monitoring the systematized data, combining raw education data with information and indicators addressing the quality of this education, employment and income prospects, and working conditions. This would contribute to the development of robust public policies based on accurate data.



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