

# Gymnastics Teaching in Public Higher Education Institutions of the State of Minas Gerais<sup>1</sup>

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## ABSTRACT

This article is part of a nationwide study that analyzed the teaching of Gymnastics in public Higher Education Institutions (HEIs) and the profile of the professors responsible for this activity. In this excerpt, we present the results related to the state of Minas Gerais. With a documentary research, we reviewed the official websites of the HEIs and subsequently, the professors' curricula. We analyzed the websites of the 11 institutions and, through an email consultation with the coordinators, we listed the professors responsible for teaching Gymnastics courses in 2020. This survey enabled us to establish a relationship between those who teach, study, research, and produce knowledge in the area of Gymnastics, along with the importance of these specialists in the disciplines. Although they are a minority, the state of Minas Gerais has some professors with specialized and long-term work, nucleating the development of Gymnastics and offering significant representation in the state.

**KEYWORDS:** Gymnastics; Initial training; Physical education.

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*Ensino da Ginástica nas Instituições Públicas de Ensino Superior do Estado de Minas Gerais*

**RESUMO**

Esse artigo faz parte de um estudo de abrangência nacional que analisou o ensino da Ginástica nas Instituições de Ensino Superior (IES) públicas, e o perfil dos(as) docentes responsáveis por essa atividade. Nesse recorte apresentamos os resultados relativos ao estado de Minas Gerais. Por meio de uma pesquisa documental revisamos os sites oficiais das IES e posteriormente, o currículo das/dos docentes. Analisamos os sites das 11 instituições e por meio de uma consulta via e-mail dos(as) coordenadores(as), elencamos os(as) docentes responsáveis pelo ensino das disciplinas de Ginástica no ano de 2020. Tal levantamento nos permitiu estabelecer uma relação entre quem leciona, estuda, pesquisa e produz conhecimento na área da Ginástica, juntamente com a importância desses especialistas nas disciplinas. Apesar de ser a minoria, o estado de Minas Gerais possui alguns(algumas) docentes com atuação especializada e prolongada, nucleando o desenvolvimento da Ginástica e ofertando uma representatividade significativa no estado.

**PALAVRAS-CHAVE:** Ginástica; Formação inicial; Educação física.

*Enseñanza de la Gimnasia en las Instituciones Públicas de Educación Superior del estado de Minas Gerais*

**RESUMEN**

Este artículo forma parte de un estudio a nivel nacional que analizó la enseñanza de la Gimnasia en las Instituciones de Educación Superior (IES) públicas, y el perfil de los docentes responsables de esta actividad. Mediante una investigación documental al estado de Minas revisamos los sitios web oficiales de las IES y posteriormente, los currículos de los docentes. Analizamos las 11 instituciones y a través de una consulta por correo electrónico a los coordinadores, enumeramos los docentes responsables de la enseñanza de las disciplinas de Gimnasia en el año 2020. Este levantamiento nos permitió establecer una relación entre quienes enseñan, estudian, investigan y producen conocimiento en el área de la Gimnasia. A pesar de ser la minoría, el estado de Minas Gerais cuenta con algunos docentes con actuación especializada y prolongada, nucleando el desarrollo de la Gimnasia y ofreciendo una representatividade significativa en el estado.

**PALABRAS CLAVE:** Gimnasia; Formación inicial; Educación física.

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## Introduction

Gymnastics, as a field of knowledge, includes practices of physical conditioning, competition, demonstration, and body awareness, as best argued by Rinaldi; Paoliello, 2008; Oliveira et al., 2021. This article addresses these body practices, emphasizing the presence of this knowledge as a curriculum component in initial training in Physical Education.

Therefore, we start by recalling the consolidated condition of teaching gymnastics in higher education, as highlighted by the author:

Disciplines related to gymnastics have been present in Brazilian High Education curricula since the first begin. With the arrival of the French "*Education Physique Sportive Generalisée*" method in Brazil in the 1940s, the institution of sport gained more and more support, including gymnastics. The maintenance of this content in the form of a discipline in higher schools of physical education became more and more frequent, fulfilling the technical aspects only (Rinaldi, 2004, p. 26).

Indeed, over time and recognized as a “classic” area of physical education (Coletivo de Autores, 1992), the practice of gymnastics was inserted in the most diverse socio-educational settings, including schools, gyms (Carbinatto et al., 2016; Toledo, 2010), and clubs in the sports sector, among others (Sarôa, 2005; Peres; Melo, 2014). Therefore, the initial training offered by national higher education institutions (HEIs) has a relevant impact in this context. For example, as highlighted by Mariano et al. (2016, p. 12), “[...] the lack of adequate training of teachers and the difficulty in teaching the content of gymnastics help minimize the presence of the content in physical education classes.” Here we see a direct connection between the actions of professors in

undergraduate courses (initial training) and the pedagogical practice performed later (Schiavon; Nista-Piccolo, 2007).

In general, there are sufficient indicators showing that, at the beginning of the 21st century, gymnastics continues a representative practice for this field (Bezerra et al., 2014) and that it deserves continued attention aiming to reveal the practical dynamics and how HEIs can handle the particularities of the multiple contexts in which they are inserted.

In the context of physical education in schools, the National Common Curricular Base - BNCC (Brazil, 2017) adopts the term gymnastics in one of its thematic units, dividing it into general gymnastics, physical conditioning gymnastics, and body awareness gymnastics. This document acts as a guide for the work of elementary school teachers, supporting physical education classes in the initial and final years. Despite presenting a series of practices and different characteristics, the teacher is expected to expand this content through multiple learning experiences in initial and continuing education. The thematic unit of gymnastics must respect the eight dimensions of knowledge: experimentation, use and appropriation, fruition, reflection on action, construction of values, analysis, understanding, community leadership, all proposed in a playful, relevant and meaningful way.

In this sense, teaching gymnastics in physical education teacher training and undergraduate courses has been regularly studied (Mariano et al., 2019), seeking to learn more about the professionals involved and understand the political pedagogical projects of Brazilian HEIs (Rinaldi, 2004; Rinaldi; Paoliello, 2008), among other relevant aspects. In general, there is an understanding that:

[...] the presence of gymnastics in the program is legitimate to the extent that it allows students to subjectively interpret gymnastic activities, in a broad space of freedom to experience their own body actions (Coletivo de Autores, 1992, p. 77).

Given the importance of this subject, between 2020 and 2021, the Gymnastics Research Group (FEF-Unicamp) conducted a nationwide study involving different work groups and the contribution of researchers from several Brazilian universities, in order to analyze gymnastics teaching in public HEIs and the profile of the professors responsible for this activity. The results of this study have been gradually published, exploring the particularities of the different regions, such as the North region (Menegaldo et al., 2022) and the South region (Bento-Soares et al., 2024).

This article presents the results related to the state of Minas Gerais, analyzing details of the HEIs, the disciplines offered, and the profile of the professors.

## Method

As mentioned above, this study is part of a research project developed by the Gymnastics Research Group (FEF-Unicamp) named “Regionalization of professors, disciplines and scientific productions in gymnastics: study on public HEIs in Brazil,” whose general objective is to map and analyze gymnastics professors from public HEIs in the five Brazilian regions, expanding our knowledge about the profile of professors and their performance in the field of gymnastics. The study above was approved by the Research Ethics Committee (REC) of Unicamp under report n°. 4.723.264.

The study started with a documentary research process conducted by different subgroups of researchers for each of the five regions of Brazil. The work developed by the subgroup responsible for the Southeast region showed that this region has the largest number of HEIs, motivating the decision to subdivide the data analysis as follows: Minas Gerais, São Paulo, and Rio de Janeiro/Espírito Santo.

This study is focused on Minas Gerais, a state of 586,852.35 km<sup>2</sup>, the fourth largest state in Brazil by area, with a population of 20.539.989

distributed in 853 municipalities. The state has 11 public Higher Education Institutions (HEIs) – nine federal and two state, located in 12 mesoregions of the state, of which 11 were selected for this study.

We analyzed the platforms of the Ministry of Education, CAPES, and CNPQ, and subsequently the websites of each of the HEIs. Finally, we contacted the coordinators and professors responsible for teaching gymnastics disciplines in 2020 via email. First we asked the coordinators for the names of the gymnastics professors, the disciplines taught, and their personal emails so that we could contact them later. In some cases, we had to contact them via social media platforms (Facebook, Instagram, etc.) or messaging app WhatsApp, using the snowball procedure, which is explained below:

Snowball sampling is a non-probability sampling method that uses referrals to find new participants. In other words, with this specific type of sampling, it is not possible to determine the probability of selection of each participant in the study, but it is useful when certain groups of difficult access are analyzed (Vinuto, 2014, p. 203).

Based on this search and with the help of the participants who had already been found, it was possible to finally contact the coordinators of all 11 institutions.

The study population was characterized by the criterion of social group, i.e., it is a group that can be identified, socially structured and that maintains a continuous relationship by exercising a certain social role (institutionalization), as defined by Berger and Luckmann (2004). Specifically, this group is made up of teachers over 18 years of age, whose social role is the professional practice of teaching the discipline of gymnastics in public higher education institutions in Brazil.

Then, 26 professors were found, with their bio accessed on the Lattes Platform. Based on this document source, we studied the profile of these

professionals, including their work in initial training (undergraduate course), graduate course (academic and professional programs), guidance for end-of-course assignments, scientific initiation, master's, and doctoral programs in the subject of gymnastics. The disciplines taught, the time of work at the HEI, the frequency of bio update on the Lattes platform, publications of articles and books, outreach projects and courses, and the coordination of study or research groups were also analyzed.

Data were organized in electronic spreadsheets (Microsoft Excel), analyzed by combining descriptive statistics and content analysis (Bardin, 2011), and reviewed by at least two members of the group.

### **Overview of higher education institutions in Minas Gerais**

Of all 11 HEIs in the state of Minas Gerais that offer physical education courses (bachelor's and/or teacher training degrees), nine are federal (82%) and two are state schools (18%) (Table 1). Some of them have more than one campus, expanding their regional reach. Nine HEIs offer both types of degrees (bachelor's and teacher training degrees), one offers only a bachelor's degree and one offers a teacher training degree, as indicated in the table below.

**Table 1:** Public HEIs in the state of Minas Gerais that offer physical education courses.

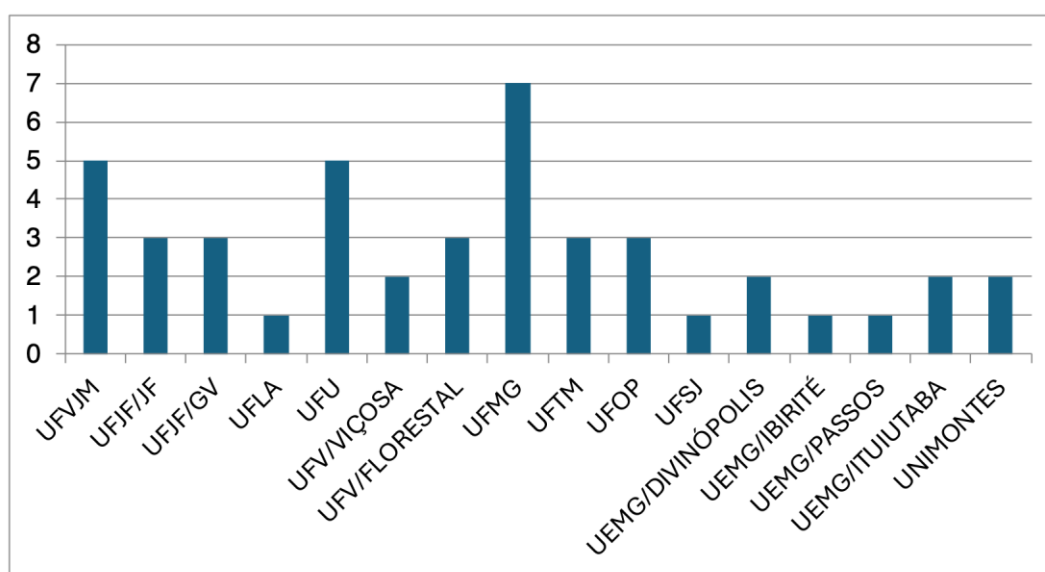
<b>Federal universities</b>	<b>Abbreviation</b>	<b>Campus</b>	<b>Region of the state</b>	<b>Type of degree: Bachelor' degree (B) / Teacher training degree (T)</b>
<b>Universidade Estadual de Minas Gerais</b>	UEMG	Divinópolis Ibirité Ituiutaba Passos	West Metropolitan Area Triângulo Mineiro South and Southwest	B/T
<b>Universidade Estadual de Montes Claros</b>	UNIMONTES	Montes Claros	North	T
<b>Universidade Federal de Juiz de Fora</b>	UFJF	Juiz de Fora and Governador Valadares	Zona da Mata Vale do Rio Doce	B/T
<b>Universidade Federal de Lavras</b>	UFLA	Lavras	Campo das Vertentes	B/T
<b>Universidade Federal de Minas Gerais</b>	UFMG	Belo Horizonte	Metropolitan Area	B/T
<b>Universidade Federal de Ouro Preto</b>	UFOP	Ouro Preto	Central	B/T
<b>Universidade Federal de São João Del-Rei</b>	UFSJ	São João Del Rei	Campo das Vertentes	B/T
<b>Universidade Federal de Uberlândia</b>	UFU	Uberlândia	Triângulo Mineiro	B/T
<b>Universidade Federal de Viçosa</b>	UFV	Viçosa Florestal	Zona da Mata Mineira Metropolitan Area	B/T
<b>Universidade Federal dos Vales do Jequitinhonha e Mucuri</b>	UFVJM	Diamantina	Jequitinhonha	B/T
<b>Universidade Federal Triângulo Mineiro</b>	UFTM	Uberaba	Triângulo Mineiro	B

**Source:** Developed by the authors.



Regarding the specific disciplines in gymnastics courses, including all campuses listed above, we found 35 disciplines distributed among the HEIs, as follows:

**CHART 1:** Number of disciplines in gymnastics courses offered by HEIs in Minas Gerais.



**Source:** Developed by the authors.

It seems relevant to us to discriminate each of them by their names (Table 2), in order to understand the focus on the pedagogical political projects for gymnastics, as indicated:

After the reformulation provided in Resolution 03/87, which granted autonomy to each institution to establish its curriculum according to its needs and cultural characteristics, today we see differences in gymnastics disciplines. However, most common disciplines found were: Gymnastics (or General Gymnastics, which assumes different characteristics according to the HEI, including Gymnastics in the gym), Rhythmic Gymnastics, and Olympic (or Artistic) Gymnastics. And, certainly, they do not encompass the universe of knowledge that is specific to the field of Gymnastics, they are far from it (Rinaldi, 2004, p. 100).

**Table 2.** Gymnastics disciplines/subjects of public HEIs in Minas Gerais.

<b>Federal universities</b>	<b>Gymnastics disciplines</b>
<b>Universidade Estadual de Minas Gerais - Divinópolis</b>	Rhythmic gymnastics Artistic gymnastics
<b>Universidade Estadual de Minas Gerais - Ibirité</b>	Gymnastics
<b>Universidade Estadual de Minas Gerais – Ituiutaba</b>	Gymnastics methodology; Gymnastics teacher training practice
<b>Universidade Estadual de Minas Gerais - Passos</b>	Gymnastics
<b>Universidade Estadual de Montes Claros</b>	Gymnastics Artistic gymnastics
<b>Universidade Federal de Juiz de Fora – Governador Valadares</b>	Fundamentals of gymnastics I, Fundamentals of gymnastics II, Fundamentals of gymnastics III
<b>Universidade Federal de Juiz de Fora – Juiz de Fora</b>	Gymnastics for All; Rhythmic gymnastics Artistic gymnastics Gymnastics in the gym
<b>Universidade Federal de Lavras</b>	Individual gymnastics III
<b>Universidade Federal de Minas Gerais</b>	Gymnastics Teaching artistic gymnastics Internship – Sports training in artistic gymnastics Pedagogical processes and manipulation techniques in artistic gymnastics Internships – Sports training in gymnastics Monitored practices in gymnastics
<b>Universidade Federal de Ouro Preto</b>	Gymnastics in the gym
<b>Universidade Federal de São João Del-Rei</b>	Methodology for teaching gymnastics

<b>Universidade Federal de Uberlândia</b>	Pedagogical practice of artistic gymnastics Gymnastics Artistic gymnastics Pedagogical practice of rhythmic gymnastics Rhythmic gymnastics
<b>Universidade Federal de Viçosa - Florestal</b>	Gymnastics I and II Artistic gymnastics
<b>Universidade Federal de Viçosa - Viçosa</b>	Methodology for teaching gymnastics Pedagogical practice X – Gymnastics
<b>Universidade Federal dos Vales do Jequitinhonha e Mucuri</b>	Sports and leisure gymnastics Gymnastics in physical education in schools Fundamentals of gymnastics Physical conditioning gymnastics Workplace gymnastics and ergonomics
<b>Universidade Federal Triângulo Mineiro</b>	Fundamentals of gymnastics I, Fundamentals of gymnastics II, Fundamentals of gymnastics III

**Source:** Developed by the authors.

We noticed that there is a prevalence of disciplines that address “competitive gymnastics,” highlighting types such as artistic gymnastics (AG) and Rhythmic Gymnastics (RG). Likewise, disciplines that address Gymnastics for all (GFA) were also highlighted. Here we can observe a connection between these data and a “tradition” in Brazil of competitive gymnastics and particularly of AG and RG, as well as a more recent growth of GFA. There are studies on production in graduate programs, and in publications that show a “nationwide” similarity (Lima et al., 2016; Oliveira et al., 2009).

Only one discipline clearly and exclusively addresses physical conditioning gymnastics (gym), and no discipline addresses other expressions (trampoline gymnastics, aerobic gymnastics; workplace gymnastics, etc.). Also, they may be considered as part of the knowledge of the disciplines, although the names and syllabuses do not clearly indicate that. On the other hand, several disciplines have generic names (“gymnastics,” “fundamentals of gymnastics”, “methodology for

teaching gymnastics”) and would require detailed studies, such as those conducted by Lima et al. (2016) in Paraná and Razeira et al. (2016) in Rio Grande do Sul. In fact, this is a limitation of our study.

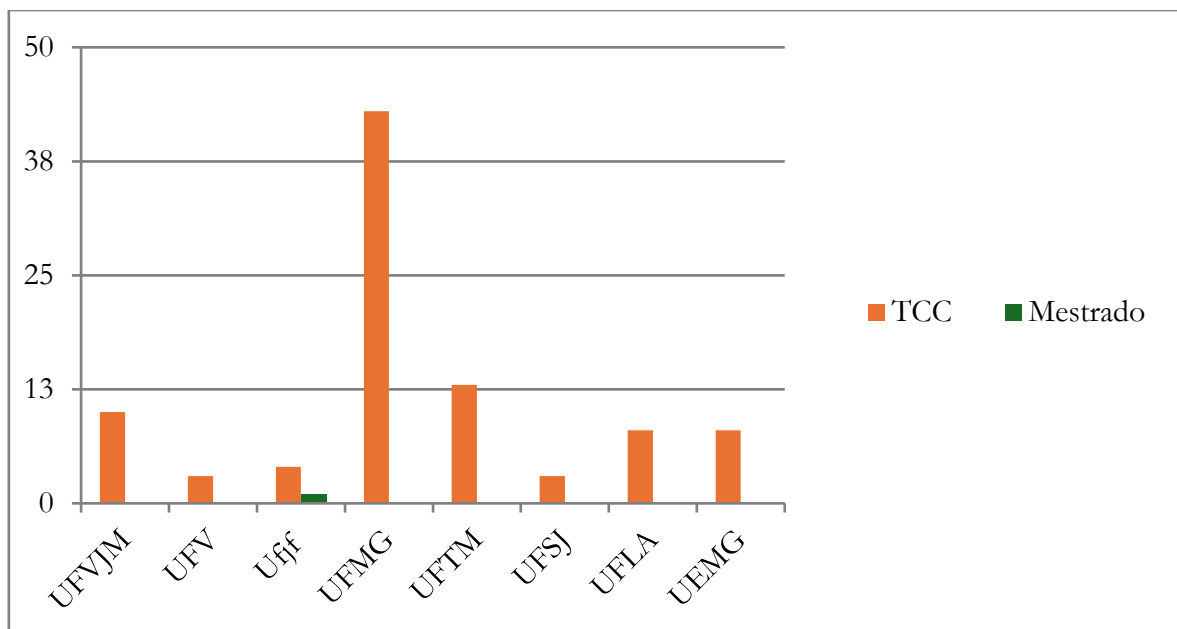
### **Profile of professors in the field of gymnastics**

Based on the analysis of the 26 bios of professors available, we found that 18 had completed a professional specialization course in different areas including: physical activity in the gym, sports training, strength training, personal training, neuropsychology, physiology and biomechanics of movement/exercise, swimming, movement pedagogy, higher education didactics, methodological and conceptual aspects of research, psychomotricity/human motricity, among others. We did not find any Gymnastics course in professional graduate programs, except for courses in physical conditioning gymnastics (gym, fitness).

On the other hand, in academic graduate studies, we identified four professors who studied gymnastics in their master’s dissertations (one professor from UFVJM, one professor from UFLA, and two from UFMG) and two in their doctoral theses (UFVJM and UFMG). Together, professional and academic graduate programs show a low specificity with the field of gymnastics and, in agreement with Bezerra et. al. (2014), may be related to the activities of these programs in HEIs, tending to have a more generalist perspective.

Regarding the activities of professors as advisors, UFMG stood out mainly in end-of-course assignments and graduate studies, as seen in Chart 2. We see a clear concentration of guidance in the undergraduate scope (end-of-course assignments), a low presence of guidance both in scientific initiation and master’s degrees, and no record at the doctoral level.

**CHART 2:** Guidance provided by professors to academic works in gymnastics (2006 to 2020).



**Source:** Developed by the authors.

Graph legend: Scientific initiation report (undergrad students); End-of-course dissertation (undergrad course); Master in Science degree dissertation (postgrad program).

Regarding end-of-course assignments, 84 works were identified, published from 2006 to 2020, with gymnastics as a theme in the Lattes bio of the professors from nine universities in the state of Minas Gerais. We can compare them to the publications from the School of Physical Education - FEF-Unicamp, a higher education institution in the state of São Paulo, in the southeast region, which had 156 works from 1990 to 2014 (Milani; Soares; Bortoleto, 2015) in only one university. The authors state that “[...] the work of several professors in gymnastics with the FEF in this period and the existence of several disciplines in the area seem to have contributed to the high number of works produced in this period” (Milani; Soares; Bortoleto, 2015, p. 92).

Even though there is a flow of teachers in and out of the HEIs and many other factors that could indicate a different configuration in Minas Gerais, it is clear that studies related to gymnastics have not been highlighted in this state as a prominent subject among undergraduate

and graduate academic works. The end-of-course assignments indicated in Chart 2 are concentrated on a few professors, mainly at UFMG, followed by UFTM and UFVJM, and not an object of study for all professors who teach gymnastics disciplines. When comparing the graduate research projects conducted in the field of gymnastics by gymnastics teachers, we see that both UFMG and UFVJM professors have researched gymnastics in their master's and doctoral programs.

When comparing to other Brazilian states, this scenario is also seen in the North region of Brazil, as described:

This gap between the area of research in graduate training and the area of activity in HEIs seems to impact the production of knowledge, given the significantly low number of publications found. None of the nine institutions had specific research groups in gymnastics registered in the Directory of Research Groups of the Lattes/Carlos Chagas Platform (Menegaldo et al., 2022, p. 285).

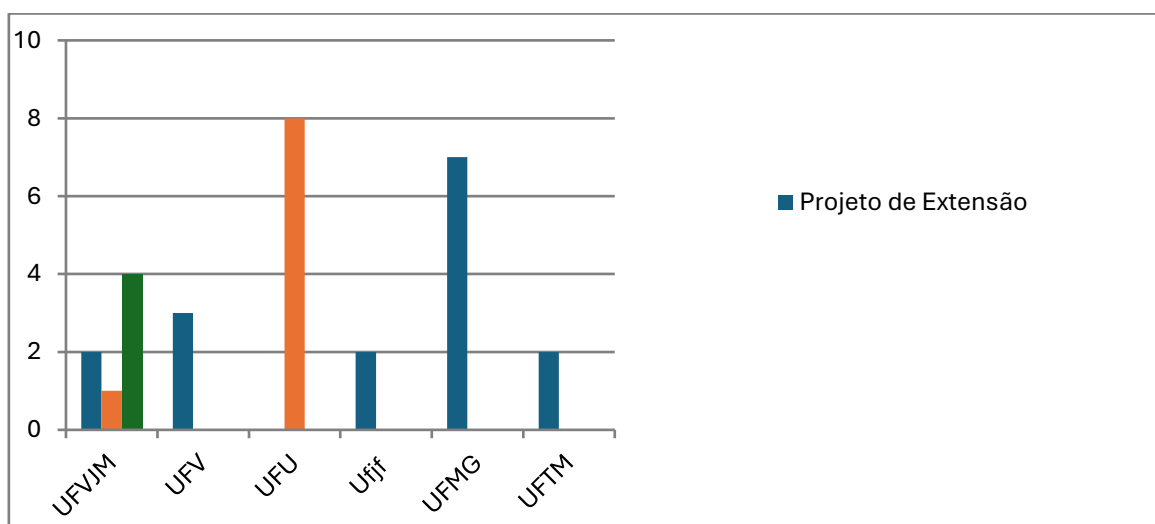
Regarding the activities of professors in university outreach programs, we found one outreach project at UEMG, two at UFJF and UFVJM, three projects at UFV and UFTM, and 11 projects at UFMG, totaling 22 outreach programs. These actions related to university outreach have a strong connection with the practice of university students as an opportunity to experience teaching practice and be encouraged to research gymnastics, strengthening the university triad of teaching, research, and outreach activities, as pointed out by Barragán et al.:

Then it is possible to observe an understanding that outreach programs enhance the relationship between the university and other sectors of society, with a view to transformative professional actions focused on the interests and needs of the

population, promoting regional development in this field, as well as effective public policies (Barragán et al., 2016, p. 42).

We noted that eight professors (32%) did not have any outreach projects or participation in scientific or sports events in gymnastics in their bios, suggesting that teaching (undergraduate disciplines) does not happen in an expanded manner and is not connected to research and outreach activities.

**CHART 3:** Outreach projects, scientific events, and sports events of gymnastics.



**Source:** Developed by the authors

Graph legend: Outreach projects; Scientific events of gymnastics; Sports, and cultural events including gymnastics.

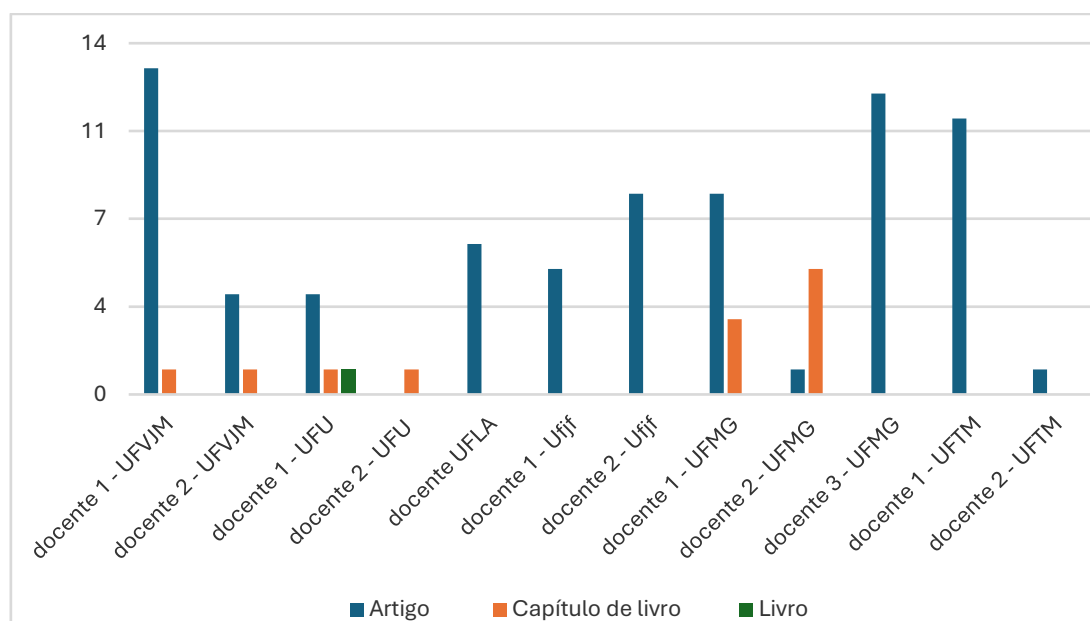
Public universities must have the three pillars of higher education, offering teaching, research, and outreach activities. In this regard, we observe in Graph 3 a significant concentration of gymnastics events in only two institutions (UEMG included all 4 campuses). This finding shows again that the involvement in studies and research related to gymnastics remains with the same professors who researched gymnastics in their graduate studies.

Regarding the universities that have specific research groups in gymnastics, data analysis using the CNPq Research Groups Platform helped identify two groups: NUPEGIC – Gymnastics and Circus Research Center at

UFU; and Group for Gymnastics Studies and Practices at UFVJM. It represents 18.8% of the HEIs with research groups in gymnastics. Considering the importance of research, and more particularly of study/research groups for the development of a knowledge field in the university context, previous data reveal a timid presence of gymnastics in the HEIs of the state of Minas Gerais.

Finally, when analyzing the scientific publications on gymnastics by the professors (Chart 4), a higher number of articles is observed, when compared to book chapters and books, published by 12 professors from six HEIs. The other 13 professors did not have any publications on gymnastics while conducting any research, as indicated in their Lattes bios.

**CHART 4:** Publication in gymnastics: articles, book chapters, and books.



**Source:** Developed by the authors.

Graph legend: Article; Book chapter; and Book.

Professor 1 – UFVJM; Professor 2 – UFVJM; Professor 1 – UFU; Professor 2 – UFU; etc.

We emphasize that each column in Chart 4 above refers to the production of one professor, so 12 of them have production in the field of gymnastics. Therefore, the other 13 professors (52%) do not have any publications in gymnastics, reinforcing the idea the presence of non-



specialists in about half of the teaching staff at public universities in Minas Gerais.

Based on data presented in Charts 2, 3 and 4, which show the trajectory of professors in the field of gymnastics, we observe a higher number of publications of professor 1 (UFVJM). At UFMG, professors 1, 2, and 3 teach gymnastics disciplines and present more meaningful activities, with a better consistency in the three pillars of teaching, research and outreach activities at the HEI.

These findings highlight the importance of the presence of specialists in gymnastics in universities so that the development of this area can be driven in this state, not just restricted to the disciplines in the curriculum. Universities that have specialists who also produce knowledge in this field and have university outreach activities are those that encourage their students to participate in scientific studies and take university outreach courses, providing a broader and more effective training in gymnastics.

### **Final considerations**

This study helped establish a relationship between those who teach, study, research, and produce knowledge in the field of gymnastics, and highlighted the importance of these specialists in the disciplines. With this analysis, we were able to identify those who work as researchers, learn more about the research groups registered in the Lattes platform, analyze the scientific productions of professors in the field of gymnastics, and discriminate the gymnastics disciplines taught.

Although the analyses indicate that many professors responsible for gymnastics disciplines do not work in outreach and research activities, the state of Minas Gerais has some teachers with specialized and long-term experience, driving the development of gymnastics in the state. We noted that those who chose to develop their dissertations and theses in the field of gymnastics continued with a strong presence in research and outreach,

offering a significant representation in the state. Following the same trend observed in the South region of the country (Bento-Soares et al., 2024), of all 20 HEIs analyzed in this study, only two offer teaching, research, and outreach activities in the field of gymnastics.

Certainly some of these activities have a significant impact on the field, posing a future challenge for the HEI when the time comes to select new professors due to retirement or any other reason that leads to their departure. In fact, long-term planning and hiring strategies through well-designed public selection processes seem to be an important tool to help preserve a field of knowledge.

The professors from Universidade Federal de Minas Gerais and Universidade Federal Vale do Jequitinhonha e Mucuri stood out in different aspects analyzed in this study (scientific publications, outreach projects, etc.), reinforcing their relevance for the state of Minas Gerais and recognizing that other professors/HEIs have presented a consistent performance in gymnastics more recently. It should be noted that, on the other hand, nine professors have not published or participated in scientific, sports or cultural activities related to gymnastics. Although they are not specialists, teaching (disciplines) would have to be accompanied by other research/ outreach activities for the minimum development of this field in the HEI. The absence of a context with more opportunities, in the medium and long term, can affect an area of the initial training and, consequently, the subsequent performance of graduates in the most diverse fields.

It is important to highlight that the official websites of some HEIs, despite their commitment to transparency, are not updated or even out of service. Information about the Political Pedagogical Project and their respective curriculum is highly limited, making our research difficult and not allowing public access to this essential information on higher education courses. In many cases, even basic information was missing, such as discipline syllabus, professors in charge, or even contact details of coordinators and professors. Likewise, the analysis of the Lattes bio showed

a lack of updated information, as well as incomplete and careless filling in many cases. The same condition was observed in the North and South regions of Brazil, according to published studies from the same research project as ours (Menegaldo et al., 2022; Bento-Soares et al., 2024), which suggests that it is not a problem found only in the state of Minas Gerais.

Regarding the gymnastics disciplines, future studies on the program content can certainly help expand such knowledge. As described above, the presence of many non-specialist professors suggests that the disciplines do not reflect contemporary issues or fail to incorporate recent scientific production. Then, future studies could address the gap in initial training in terms of the state of the art in this field.

We understand that our study had a specific timeframe and the teaching staff has certainly changed in recent years, which may reveal a different condition in the future. Another study limitation was the non-inclusion of private HEIs in the investigation, which have an important presence in the state. We have evidence, as seen in the study by Marcus Ambrosio et al. (2020), of the private sector contribution to gymnastics, indicating the need to expand the study in the future.

Our study is part of a national research project, and as foreseen in the project, the failure to consider the production and contribution to the field of professors who are not involved in teaching gymnastics also reveals another limitation of the investigation.

According to the data analysis performed in our study, the number of supervised end-of-course assignments showed higher relevance, while research activities had little expression in graduate studies, which was also observed in a study about the North region (Menegaldo et al., 2022), but different from the findings of the South region (Bento-Soares et al., 2024). Therefore, except for UFMG, we see more activities in the initial training (undergraduate studies), with some professors leading research and outreach projects, but in few HEIs.

We hope that this study, despite its limitations, can inspire further investigations and reflections on public policies that can strengthen the role of specialized professors in higher education, a condition that favors the development of the field of gymnastics.

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