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Image representations during initial training in physical education about their profession

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INTRODUCTION

When observing the initial training in the area of Physical Education, it is noted that there are barriers to be overcome throughout their professional career, such as, for example, the understanding of how to act in accordance with the principles proposed by the Law of Guidelines and Bases (LDB) of 1996, especially when there is a need to think about the complexity that exists in the process of training the Physical Education Teacher due to the National Curriculum Guidelines (DCN) of 2018.

Therefore, it is essential to train a professional with critical and reflective capacity to solve the challenges that will arise in their career. This training should cover the subareas of Physical Education, which include biodynamics (related to biological and health sciences), sociocultural aspects and pedagogical aspects (linked to the social and human sciences) (Kokubun, E., 2004; Correa, de Silveira, Rigo, 2020; Caneiro, Neto, dos Santos, 2020). In this way, the professional will be prepared to face a variety of situations in their field of activity.

Triani, Magalhães Junior and Novikoff (2017), identify that most Physical Education students are unable to attribute meaning to teacher training in the Physical Education course. Other studies carried out to understand the representations of students of the Undergraduate Physical Education course in relation to being professional have observed a predominant trend of aspects of the biodynamic subarea, suggesting that Physical Education is primarily anchored in the Biological Sciences, from a biologizing understanding that neglects its epistemological diversity. (Triani et al, 2019; Triani, Novaes, Telles, 2023)

Allied to this, it is necessary to promote how we can improve the way students think about their professionalism throughout their initial training, therefore reflective practices on the knowledge of the area. Student-centered teaching, as proposed by innovative teaching methods, can strengthen the apprehension of meanings that can corroborate this process. This occurs as students' prior knowledge is dynamically modified during the teaching-learning process. This approach favors subordinate meaningful learning, which is reflected in the cognitive restructuring of students (Melo, Brito, Sá, 2021).

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In the search to identify the students' previous knowledge about their professionality, the objective of the research was to identify the central core of the students' social representations in relation to the object of study of Physical Education. It is also intended to discuss these representations with a focus on the subareas of Physical Education, thus seeking to unveil the essence of the phenomenon of social representations about the meanings attributed by students in relation to their object. As a theoretical inspiration for understanding this phenomenon, we support our study based on the Theory of Social Representations (Moscovici, 2007), but adopting the line called Theory of the Central Nucleus (Abric, 2000; Sá, 1996).

THEORETICAL-METHODOLOGICAL PROCEDURES

TYPE OF RESEARCH

The study in question is based on a qualitative research approach, in which the object of study serves as a starting point to understand the new and develop empirical theories. From this perspective, the subjective point of view of the participants involved in the research is valued, as recommended by Flick (2004).

This type of research, due to its interpretative nature, seeks to deepen the understanding of the phenomena studied, taking into account the complexity and richness of the experiences of the individuals involved. By adopting this approach, it seeks not only to describe the phenomenon (quantitative codes), but also to interpret its meanings (semantic codes), contexts and social relations, providing a deeper and more contextualized understanding of the research object. In our case, the object to be unveiled is to understand the way in which Physical Education teachers think about their object of study at the initial moment of their training.

The interviews were analyzed based on the indications of Bardin (2015). As described by the author, the intention of the analysis is the inference of knowledge "[...] relating to the conditions of production (or, possibly, of reception), an inference that uses indicators (quantitative or not) (p.40)". There are different techniques of content analysis, but the best known is by categories, chronologically it is the oldest, as well as the most used. In our case, we opted for the Analysis of Relationships, which aims to "[...] no longer for the simple frequency of the appearance of the elements of the text, but for the relations that the elements of the text maintain among themselves (p. 257)".

Nevertheless, Bardin (2015) clarifies in his work, when adopting this technique, to carry out two types of procedures, that is, Co-occurrence Analysis and Structural Analysis. In the first of these, it is sought to extract from the text "[...] the relations between the elements of the message, or more exactly, is dedicated to pointing out the simultaneous presences (co-occurrences or association relationship) of two or more elements of the same unit of context, that is, in a previously defined message fragment (p. 258)". In

this sense, and considering the context of our research, we chose as registration units the smallest unit, the word – lexicography.

As for Structural Analysis, it is sought to "[...] the immutable order under apparent disorder, the skeleton or the invariable bone under the patent heterogeneity of phenomena (p. 264)". The author continues by describing in her work that we must go with this type of analysis beyond the meanings. In other words, "[...] we no longer work on the basis of the classification of signs or meanings, but we focus on the arrangement of the different items, trying to discover the significant constants in their relations (apparent or latent) that organize these items among themselves (p. 265)".

SAMPLE

The study population was physical education students in the 3rd semester of Physical Education, of the Bachelor's Degree course, at a university in the State of São Paulo, specifically in the Greater ABCD Region. The inclusion criterion was students who were regularly enrolled in the 3rd semester of the morning and evening undergraduate courses. The exclusion criteria were those who did not sign the Informed Consent Form (ICF), as well as those who did not want to participate in the research.

METHOD

As the choice of the research method, the Central Core Theory (TNC) was chosen (Abric, 2000; Sá, 1996), in which it is one of the strands of the Theory of Social Representations (SRT) (Moscovici, 2015; Brito, 2023), which seeks to understand how a certain subject is shared by individuals from the same social group, in our case, students of the Physical Education Course at the beginning of their training. TNC suggests that social representations are composed of two systems: the Central Core (NC), which is formed by the most important concepts and organizes the others (Stable), and the Peripheral Elements, which are flexible and support the core.

Therefore, the methodology applied for this type of research is through the use of the Free Word Association Technique (TALP), or also called Free Word Evocation (ELP), which consists of the respondent listing which words come to mind according to another word, called the inducing theme. In the research in question, the following question was asked: Taking into account the knowledge learned in graduation, up to this moment, what comes to your mind about what Physical Education is? Name the first five words that come to your mind. Following the questionnaire, the students were asked to classify these words in order of importance, with number 1 being the most important and 5 the least important word, followed by the justification for the choices.

DATA ANALYSIS

The research data were analyzed using the Automated Content Analysis technique, derived from the content analysis of communications (Bardin, 2015; Franco, 2021), but incorporating statistical software for inference (Brito and Sá, 2022), with the *IRaMuTeQ (Interface de R pour les Analyses Multidimensionnelles de Textes et de Questionnaires*) software being chosen, version 0.7, which is freely accessible and uses statistical language R. The form of data analysis was based on Matrix Analysis (Camargo and Justo, 2013).

It allows working with matrices that involve categorical variables and lists of words, such as those obtained from tasks of associations or free evocations (Sá, 1996). In this case, the software enables frequency counting, chi-square calculation, similarity analysis and prototypical analysis.

Similarity analysis is based on graph theory and seeks relationships of objects of a given set. Its formula is: G (V, E), where G stands for graph and is composed of vertices (V) and several connections between two vertices (E). It allows the identification of co-occurrences between words and its result brings indications of the connection between words, helping to identify the structure of the content of a textual corpus. With regard to the prototypical analysis, it provides the creation of a four-box diagram for the study of the centrality or not of the evoked words (Called the Vergès quadrant). The thematic categories, therefore, semantic meanings unveiled in our research, as a function of the corpus analyzed derived from the justifications of the research participants, had as indicators the codes obtained according to the subareas of Physical Education according to Kokubun (2004); Correa, by Silveira, Rigo (2020), as well as inspired by the research of Caneiro, Neto, dos Santos (2020).

RESULTS AND DISCUSSION

From the questionnaire, we obtained the answers of 67 students, 40.3% of whom were enrolled in the evening period and 59.7% in the morning. The vast majority of participants (71%) were between 18 and 21 years old, with 24 students identified as female (35.8%) and 43 identified as male (64.2%). When asked if they worked or interned in the area of Physical Education, 52.2% worked in some way and 47.8% did not exercise professional activity or in the form of an internship.

Regarding the prototypical analysis, a diagram with four quadrants was created by the software to represent the centrality, as well as its peripheries (Called the Vergès quadrant). It was possible to verify an average frequency (f[3]) of words of 4.83 and an average order of evocation (OME) of 2.91. By observing

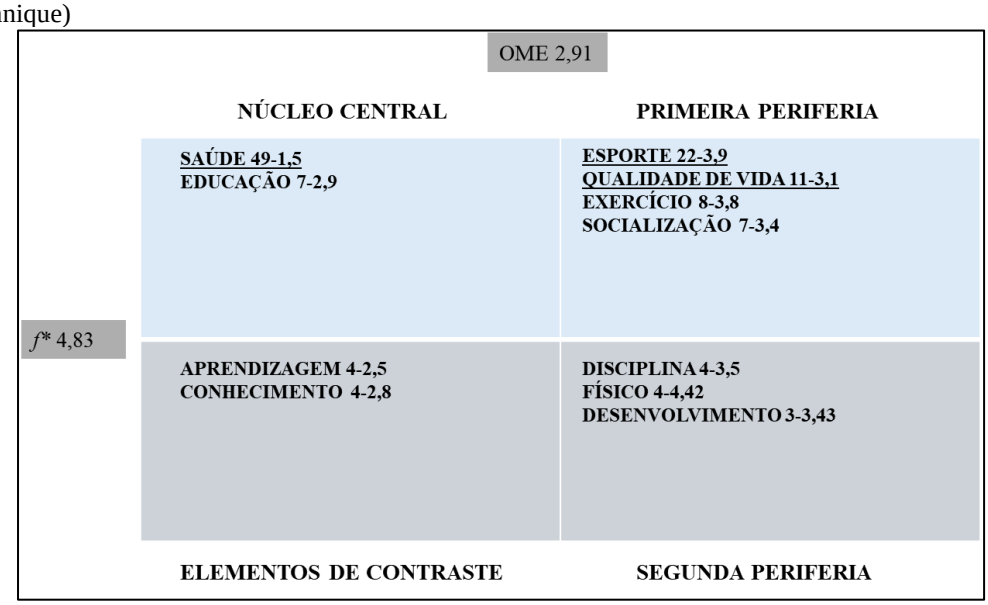
[3] The letter "f" represents the average frequency of the words cited by the students and the expression "OME" means the average order of their recall. The OME was cited from the most important (1) to the least important (5), according to the meaning given by the participants.

the quadrants, it was possible to organize the central nucleus, or also called centrality, as well as the words evoked in the four houses (central nucleus, first periphery, elements of contrasts and second periphery).

In Figure 1, it is possible to observe the central and peripheral nucleus (first and second periphery), as well as the contrast elements, after the application of the free word association technique (TALP), as described in our methodological procedures. It was possible to verify in the central nucleus the students' thinking in relation to Physical Education. Thus, it was possible to identify as central themes the words evoked related to Health (f= 49; OME=1.5), Education (f=7; OME=2.9), Mental (f=7; OME=2.4), Inclusion (f=6; OME= 2.3) and Body (f=5; OME=2.2). In the first periphery, Sport was found (f=22; OME=3.9), Quality of life (f=11; OME=3.1), Exercise (f=8; OME=3.8), Socialization (f=7; OME=3.4), Well-being (f=6; OME=3.7).

The Second Periphery was composed of Discipline (f=4; OME=3.5), Physical (f=4; OME=4.2), Development (f=3; OME=4.3). The contrast elements found were Learning (f=4; OME=2.5), Knowledge (f=4; OME=2.8), Teaching (f=3; OME=2) and Conditioning (f=3, OME=1.7).

Figure 1: Central nucleus, first and second periphery, and contrast elements after prototypical analysis of the TALP (Free Word Association Technique)



Source: Adapted from the Iramuteq software

It can be observed that the Health element (f=49; OME=1.5) is at the core of the students' representations, which suggests that there is an influence of the sub-area (Biodynamics) and can be inferred from their narratives, as they bring this relationship not only with the sub-area (Biodynamics), because the word alone does not indicate these qualities.

Some students even described that

> *"These are words that define what Physical Education is, an area focused on health, which needs a lot of knowledge and helps in the development of people, but it takes discipline, and it uses sports a*

lot." I chose these words, because for me Physical Education is health and to be healthy it is necessary to perform exercises and training and with that have a good quality of life."

"Health first, because health always has to be good to practice Physical Education, sport second, because with it you have to have exercise and your physique appropriate for sport, and competition, because to compete you have to have your exercise, physical, sport and health all well."

"Life is movement and Physical Education is directly related. Health, because Physical Education is essential for health in general. Education, educates people too much; socialization, makes people with similar goals meet and create friendships. Sports, because it is a very big part of Physical Education".

"I believe that the most important thing for people is to be healthy, but many people seek sports to improve their self-esteem and, consequently, want to gain muscle mass, with this it is also important to improve elasticity and, finally, body consistency is what develops with sport, which ends up becoming something important that also accompanies a person who practices physical activities."

"I believe that the reasons for choosing to study Physical Education come down to providing health or high performance in less recurrent cases. Health and well-being are vital points for every human being and define how our life is lived. Concern for others so that they participate in physical activities whatever they may be is essential for those who follow this path and must be tied to their vocation."

"All the words chosen are directly related to each other since health is the primary of all, from Physical Education health is the basis that should be one of the priorities in a world where sedentary lifestyle and postural problems. At this point activity and movement come in. An individual who moves more is naturally more active, which is consequently healthier, movement comes from activities including sports, which not only work as a way to condition the body and mind, but also to entertain them, as a consequence of a healthier mind."

"Health first of all because you can survive this way without suffering. Fun because Physical Education is very diverse and you will find something that you enjoy and have fun doing. Evolution, because it teaches several things that will certainly make you evolve in many aspects of life. Life, because for many the reason for living and being alive is the movement is to have fun within Physical Education."

These narratives lead us to the Renewed Health Approach in Physical Education, defended by Guedes (2021) emphasizing that the regular execution of physical exercises can result in a more dynamic lifestyle, which, in turn, can have a positive impact on the health of individuals. In the same direction, Nahas (2007) reinforces that from the early school years, the discipline of Physical Education plays a crucial role in the promotion of health, quality of life and well-being. It is critical that individuals understand the intrinsic value of physical activity as an essential factor in maintaining health. Considering that students went through Basic Education to reach University, Moscovici (2015) points out that we are products of everything we live and past experiences permeate this entire way of thinking and acting in reality.

In the first periphery, elements such as Sports (f=22; OME=3.9), as well as other elements, but Tubino (2010) analyzes the body culture denominated as Sport from the perspective of Education. He highlights multiple times (Sociocultural) issues of sports practices and suggests that the performance of

the Physical Education professional in education be based on these aspects, not only with a focus on health. Some of the students' phrases, when justifying the choice of their words, not only reinforce Tubino's idea, but also cover aspects of the Pedagogical and Biodynamic Subareas.

Below, we describe some passages that reinforce this peripheral element, that is,

> *"... We played sports and had a lot of leisure during classes, when our focus was not on the sports career in which we trained to be the best at what we did..."*
> *"As I do an internship in the soccer part, these words are important both in the students' learning and in their mental part, because today in soccer the area of the mental part is important, not only in soccer but in any sport"*
> *"Body knowledge is the basis for any sport, motor coordination is the second base, which can only be acquired by having body knowledge"*

Still in the first periphery, elements related to the Biodynamics Subarea appear, highlighting Well-being, as well as Quality of life, which demonstrates the strong connection between the central nucleus and the first periphery. We found another interesting element in our analysis, Socialization, which can be classified as Sociocultural after decoding the narratives that the students attributed meaning to this term in various contexts of Physical Education.

> *"Physical education reminds me of absolute well-being and the act of moving and promoting physical activity."*
> *"I chose these words because when I decided to study Physical Education it came from an inspiration, and with that when I entered I was able to see that Physical Education is much more than sport, it encompasses everything about the human body and our well-being"*
> *"Physical education is an area where we have many possibilities, both professional and sports, where everyone, regardless of their physical and mental conditions. In addition to improving the person's life, about their health and quality of life. I also see the professional side, where the teacher comes in.*
> *"Because in my view, Physical Education is linked to all these words that I mentioned, whose practice of physical activity actually helps in your physical and mental health, which also requires a lot of socialization and communication, an important factor for a future Physical Education teacher/coach."*

The terms of the second periphery and the elements of contrasts were not discussed because they are more transitory elements used for immediate communication and thus it is not possible to infer that they constitute the central nucleus of the students' thinking or the first periphery that is directly related to the central nucleus, according to TNC.

FINAL CONSIDERATIONS

When we analyze the initial training in the area of Physical Education, we realize the existence of challenges throughout the professional career. **The 2018 National Curriculum Guidelines (DCN)** establish essential criteria for the training of Physical Education professionals. These criteria cover

biological, psychological, sociocultural and pedagogical attributes, which must be contemplated in the disciplines of the courses.

The objective is to prepare a trained professional to work comprehensively in the area, considering the social needs related to health, education, culture, high sports performance and leisure. Training must be continuous, promoting the autonomy of the undergraduate and articulating knowledge in an integrated way. These guidelines are fundamental to ensure the quality and comprehensiveness of the training of future Physical Education professionals.

Based on the research carried out, it was possible to satisfactorily identify the representations of a group of students of the Undergraduate Course in Physical Education in relation to the image they had about the area. This understanding covers the various experiences of the group during the third semester of the course and experiences prior to this period.

During the investigation, it was found that the Central Nucleus of the students' Thought has a strong focus on the issue of health, associated with the sub-area (**Biodynamics).** However, it is relevant to mention that not all students establish a direct connection between health and Biodynamics issues. In addition, a less significant relationship was observed between the students' thinking and the subareas (**Sociocultural)** and **(Pedagogical).** This analysis contributes to a deeper understanding of the training of these future professionals and can guide teaching strategies and curricular improvement in the area of Physical Education.

Therefore, it is recommended that further research be carried out to assess whether, at the end of their graduation, these students will develop a more comprehensive understanding of the area, covering all subareas of Physical Education according to the Course Guidelines. This expansion of knowledge can contribute to a more solid and effective professional performance.

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