

## EDUCATION AND LEARNING THEORIES IN THE INTERDISCIPLINARY CONTEXT

### *EDUCATION AND THEORIES OF LEARNING IN THE INTERDISCIPLINARY CONTEXT*

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#### SUMMARY

Formal education is divided into areas of knowledge, which include different disciplines to facilitate the teaching-learning process. However, the fragmentation of content undermines an important factor for learning, which is significance. To this end, interdisciplinarity has the mission of giving new meaning to these contents, showing how the disciplines complement each other. The present work aims to discuss the concept and applicability of Interdisciplinarity in School Physical Education. To this end, research was carried out on the history of Physical Education and the relationship with the professional teacher of the subject, as well as the methods of integrating Physical Education content with other subjects, and how learning theories contribute to this process. It is understood that interdisciplinarity is an effective method for uniting different knowledge and providing more defined and applied meanings in the student's routine. **Key words:** Interdisciplinarity; Education; Learning Theories.

#### ABSTRACT

Formal education is divided into areas of knowledge, which include different disciplines to facilitate the teaching-learning process. However, the fragmentation of content impairs an important factor for learning, which is significance. To this end, interdisciplinarity has the mission of re-signifying these contents, showing how the disciplines complement each other. The present work aims to discuss the concept and applicability of Interdisciplinarity in School Physical Education. To this end, a research was carried out on the history of Physical Education and the relationship with the teaching professional of the discipline, as well as the methods of integration of the contents of Physical Education with the other disciplines, and how the theories of learning contribute to this process. It is understood that interdisciplinarity is an effective method to unite different knowledge and provide more defined and applied meanings in the student's routine.

**Keywords:** Interdisciplinarity; Education; Theories of Learning.

#### 1. INTRODUCTION

Throughout history, much knowledge has developed and solidified naturally, giving rise to different cultures, beliefs, geographic identities and the transmission of this knowledge known as education.

With the creation of schools, formal education was increasingly consolidated, however, Pereira (2017) states that the fragmentation of content and subjects was proportional to the increase in school banks, consequently it is possible to observe a loss of significance of certain contents.

In this context, studies on Interdisciplinarity in School Education emerge. According to Barros (2010), interdisciplinarity provides the student with meaningful learning, understanding the relationship and interaction between school content, as well as its relationship with the student's daily life, is different from studying fragmented content, without understanding its importance and applicability.

Given the importance of the topic, it is necessary to observe the relevance that interdisciplinarity presents for education, as Marante and Santos (2008) show how much the level of interaction and interest of students arouses when they are able to observe the relationship dynamics of different disciplines and how they they can work together to achieve a certain end.

Thus, school interdisciplinarity is a topic that deserves attention in the physical education discipline, in order to discuss how to work interdisciplinary methods with other disciplines. It is believed that the

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From this discussion it will be possible to understand how this topic tends to contribute to more complete and effective professional action by professionals in the field.

To this end, this work aims to discuss the concept and applicability of Interdisciplinarity in School Physical Education. To this end, research was carried out on the history of Physical Education and the relationship with the professional teacher of the subject, as well as the methods of integrating Physical Education content with other subjects, and how learning theories contribute to this process.

## 2. WORK DEVELOPMENT

Physical education, as an area of human knowledge, has suffered cultural and social influences over time, so that the subject teacher has also undergone methodological adaptations in different periods. According to Cruz and Santos (2016), the first period was strongly influenced by medicine, following a hygienist vision, where it was necessary to work on the body with a vision of health and hygiene, the teacher was characterized as a health professional.

With the rise of capitalism, the physical education teacher began to be characterized as a physical disciplinarian, with a militaristic approach and the aim of preparing people for work, as the country needed strong bodies with good physical performance to work in factories. The idea of the technical teacher also arises, who trains the best athletes to obtain positive results in sports competitions (PEREIRA, 2007).

After these phases, with the redemocratization of the country and the new social context of education, physical education began to aim at understanding body movements. In this context, Ivo and Ilha (2008) state that the physical education teacher must focus, even during graduation, on a broad view of the social function of the school, encompassing in his teaching methodology the reality of the students, so that the discipline includes to all.

In this process, Darido (2011) states that it is not just about practice, the student needs to understand the reason for a certain activity and the importance of this practice for their life. So the teacher's action needs to be different from the historical context of a health agent, military or technician to adapt the current social context, which understands physical education as an area of human knowledge, which emphasizes movement, motor skills within the context educational.

Given this vision, the context of interdisciplinarity in physical education emerges, which aims to integrate knowledge from various disciplines into the students' reality and provide them with global and interesting knowledge. Establishing thematic relationships between physical education and other disciplines is completely possible and allows for different possibilities, but to be efficient it is necessary for the integration to be double, that is, the other disciplines must also incorporate the content of the body culture of movement, inherent to education. physical. (BARROS, CONCEÇÃO E VIEIRA, 2010).

Still in the interdisciplinary context, it is possible to relate distant disciplines such as anatomy and molecular and cellular science with the pedagogical area. According to Souza (2018), anatomy studies the physical structure of living beings, their organs, functioning and interaction, so that these structures are formed by organized cells and this entire structure directly influences movement.

Movement is the first-order study in physical education, so Santiago (2015) says that teaching anatomy helps in understanding the motor sequences carried out in practical classes, being of extreme importance for the professional instructor and the students performing it, allowing the student to think and understand the movement and perform the sequence more effectively, which is different from just repeating a certain sequence, without understanding the reasons for certain movements.

The discipline of Molecular and Cellular Sciences focuses on the study of cells, which are the basis for the formation of living beings. According to Santiago (2015), these studies demonstrate the variety of organisms living organisms that were produced by the evolutionary process over time and the level of organization of cells that structure these living organisms.

So, interdisciplinarity allows the study of these cells to be associated with anatomy, in its various contexts, during a science class, in an exhibition of the human skeleton or in observation work under the microscope, associating the structure of the cell studied with the anatomical structure of the bone where the cell resides.

Applying it to physical education, it is possible to associate how these structures directly influence the movement performed when shooting a basket in a basketball match, for example. Darido (2011) says that pedagogical commitment is necessary for this interdisciplinarity to happen,

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so the teacher needs to teach his discipline, with an interdisciplinary perspective.

Another methodology that aims to integrate subjects and reduce curricular fragmentation is the proposal of didactic sequences. Lorena, Filgueiras and Pechliye (2013) say that didactic sequences are organized activities, with an educational objective to be achieved, with a beginning, middle and end known by teachers and students.

Within this concept, Lorena, Filgueiras and Pechliye (2013) present a proposal for a didactic sequence, relating biology and physical education, where it is possible to state that the methodology can help the student in building broader knowledge about movement, as classes carried out in the study identify the functioning of systems of the human body, within biology classes, but which make the student realize what happens inside the body, in the cardiac system, in the circulatory system and how the intensity and frequency of these movements interfere in the functioning of human systems.

The study highlights theoretical and practical classes that tend to provide a broad understanding of the movement and also make the student reflect on their actions. Lorena, Filgueiras and Pechliye (2013) state that such a proposal contributes to the dynamic learning of students and gives the teacher the opportunity to evaluate the teaching methods and content used, which tends to contribute to the dynamics of teaching and learning.

To assist in this teaching process, the teacher finds in learning theories tools that provide better integration between the different contents that can be covered in the physical education class, depending on the internal and external context of the target audience, different theoretical conceptions of learning can be used. .

The behaviorist learning theory was defended mainly by Frederic B. Skinner (1904-1990), where the learning process is evaluated by the student's behavior. According to Nogueira (2007), in this approach it is necessary to create parameters to measure learning, with the teacher being responsible for planning, organizing and executing the activities necessary to promote student learning, taking into account the circumstances and consequences that the learning can occur.

Nunes and Silveira (2015) highlight that Skinner developed a script for programmed teaching based on the objectives and content taught, with specific characteristics, such as study through subjects, teaching sequences according to the difficulties demonstrated, keeping the student with the execution of activities, student self-evaluation, *feedback* of the teacher, and an emphasis on individualized teaching and observation to favor the observation of the specific learning needs of each student.

This model is frequently evidenced in current traditional Brazilian teaching models. According to Nogueira (2007), this practice is carried out mainly with the execution of exercises and repetitive readings, where in the case of exercises, the teacher develops examples where students base themselves on responding and develop the practice of summarizing texts and books with the with the aim of greater absorption of knowledge.

According to Nogueira (2007), the socio-historical theory, defended by Liev S. Vygotsky (1896-1934) has as its principle that the individual's activity is fundamental to their psychological process, with the teacher being a mediator of the teaching-learning process. , so that this allows the student to access knowledge that is not usually available to them. It is also highlighted that the teacher's mediation is carried out through explanations, questions, corrections and inquiries that allow the child to explain their thinking.

The genetic psychology of Jean Piaget (1896-1980) says that knowledge is a continuous construction that passes through four stages of the child: sensorimotor, pre-operative, operational, and logical-formal. At each stage the child develops abilities and skills that are typical of their age. In this context, Piaget classified three types of knowledge: physical knowledge, referring to objects in the physical world,

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as well as the elements that compose them, such as noises and textures. This knowledge is perceived by experiences (MELO, 11).

Logical mathematical knowledge, carried out from the relationships established by the individual about objects, such as the relationships of bigger, smaller, thinner, longer, weight, etc. And social knowledge is related to the social interaction in which the individual is exposed to absorb certain knowledge, so that this knowledge depends on rules, values, languages and cultures that make up the social conventions of a given place (MELO, 2011).

According to Nogueira (2007), knowledge in Piaget's theory is constituted from actions, with the objective of building safe, independent citizens capable of solving problems, the pro-

Teacher is a guide in the process of building knowledge, which does not end, as knowledge is presented as a process, it is constantly evolving.

The theory of multiple intelligences, defended by Howar Gardner says that people are different in their way of thinking, acting, feeling and learning, in the same way that individual abilities have their peculiarities. According to Almeida, *et al* (2017) Gardner emphasizes that everyone has the capacity to develop different intelligences, as long as it is stimulated.

In this context, Gardner defined an equally important aspect of intelligence:

Intelligences: a) Linguistic Intelligence: is the ability to articulate words well, both in written and spoken language; b) Logical-Mathematical Intelligence: is the ability to easily understand calculations, arithmetic issues and graphics, as well as to make predictions and deal with machines; c) Spatial Intelligence: is the ability to easily understand the shapes of objects and describe them, locate oneself in unknown places, interpret maps and diagrams. It is the ability to draw and paint; d) Bodily-kinesthetic intelligence: is the ability to use the body to express words. For example, a person can perform the art of mime very well and have no talent for sports or manual work; e) Musical Intelligence: a person with this intelligence has the ability to identify sounds, melodies and volume. Has a pleasant voice and is able to play musical instruments; f) Intrapersonal Intelligence: is the ability to know oneself. A person with this intelligence easily recognizes their feelings, motivations, weaknesses, designs and intentions. g) Interpersonal Intelligence: is the ability to know and understand the feelings, motivations and intentions of other people. People with this intelligence are natural leaders; h) Naturalistic Intelligence: is the ability to recognize and classify animals, minerals and plants (PICHURSKI, 2012, page 01).

According to Nogueira (2007), the components of intelligence interact and balance the smallest and greatest abilities in each individual, so that it is unlikely that anyone will be able to develop all the abilities. Therefore, the school needs to stimulate all intelligences, provide bases for them to develop and the necessary mechanisms for their structuring.

Given this context, learning theories tend to direct the teaching didactics of the Physical Education teacher, taking into account chronological, social, environmental and behavioral information aligned with the contents planned in the pedagogical project of the academic year in question, as well as the interdisciplinary model adopted by some educational institutions.

According to Marante and Santos (2008) the contents of Physical Education must be dimensioned together with values, attitudes and procedures. Thus, in addition to the composition of the pedagogical didactic curriculum and the teaching methodologies employed, actions that encourage students to respect their colleagues, not be prejudiced, solve problem situations, among others, are important to be able to integrate the different types of knowledge worked on in Education Physics, as they provide attention and respect for the student community, teachers and the content studied.

Another question raised by Marante and Santos (2008) is about the universe worked by the teacher, as each community has its needs. Therefore, the initial assessment must be carried out individually and carefully so that the teacher has sufficient basis to align lesson plans with the specific characteristics of their audience.

Allowing students to develop their skills and overcome limits tends to result in significant learning, so that the performance presented tends to be proportional to the student's motivation in relation to the content studied.

### 3. CONCLUSION

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Physical Education is a subject that normally arouses the interest of students of all ages. In this sense, it is important that the subject teacher observes the aspects that are essential for teaching, as it is common for people to confuse the Physical Education subject with leisure and games within school.

In this sense, observing the phases of School Physical Education is necessary to enable a greater understanding of the need for the discipline in the school curriculum. Physical Education focuses on the study of motor skills and human movement, essential issues to be developed even in children, so the subject teacher has the responsibility to help improve the motor skills of their students.



Working on motor skills involves time, knowledge and improvement, as each student has a reality and need. Each student has different skills and difficulties, so teaching practice encounters specific difficulties in practical intervention, due to these issues.

Teaching practice in the area of Physical Education is often seen as inferior in level of importance, in relation to the subjects of Mathematics and Portuguese, for example. This position makes the teacher's work difficult, but unfortunately it is present in the reality of many teachers in the area.

Motivating students to commit to the learning process is another conflicting issue for teaching practice. Part of the lack of interest can be attributed to the fragmentation of school subjects, often studied separately, with no relation to the application of knowledge to the student's experience.

To this end, interdisciplinarity proves to be an effective method for uniting different knowledge and providing more defined and applied meanings in the student's routine. In this context, learning theories appear as an alternative to direct the teacher's work, in order to take into account a large amount of information and align it with the need for teaching and learning assistance.

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