

Study of the attention and its importance in teaching / learning sports Estudio de la atención y su importancia en la enseñanza / aprendizaje de los deportes

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Abstract. In this article we will try to address the importance of attention as a relevant construct in teaching, learning, performance and training of sports activities in its several modalities. We will try to draw attention to the fact that athletes in general, and young people who are developing their learning of a particular sport, are strongly influenced by their attentional profiles (e.g., depending on aspects that are more internal or external to the subjects: in a broadband perspective or with a pronounced and specific focus of the attention). Such conjectures allow us to make considerations regarding the way that teaching / learning models are conceived for physical education classes, since there seems to be a attention profiles fluctuation at different moments of the class, as well as, it cannot be forgotten the relevance of the attentional profiles of each student during the whole learning, developing and consolidating process in the practice of a sporting modality.

Key words: attention, attentional style, teaching learning of sports, physical education classes.

Resumen: En este artículo, trataremos abordar la importancia de la atención como un constructo relevante en la enseñanza, el aprendizaje, el desempeño y la capacitación de actividades deportivas en sus diversas modalidades. Trataremos de llamar la atención sobre el hecho de que los atletas en general, y los jóvenes que están desarrollando su aprendizaje de un deporte en particular, están fuertemente influenciados por sus perfiles de atención (por ejemplo, dependiendo de aspectos que son más internos o externos a los sujetos: en una perspectiva de banda ancha o con un enfoque pronunciado y específico de la atención). Dichas conjeturas nos permiten hacer consideraciones sobre la forma en que se conciben los modelos de enseñanza / aprendizaje para las clases de educación física, ya que parece haber una fluctuación de los perfiles de atención en diferentes momentos de la clase, así como, no se puede olvidar la relevancia del perfiles de atención de cada alumno durante todo el proceso de aprendizaje, desarrollo y consolidación en la práctica de una modalidad deportiva.

Palabras clave: atención, estilo de atención, enseñanza aprendizaje de deportes, clases de educación física.

Introduction

Attention has been one of the variables or constructs most studied in the human neurosciences field (James, 1890; Posner & Petersen, 1990).

It represents globally a variety of cognitive and even sensory - motor and physiological (arousal) abilities, which enable an organism to act in a more conscious and guided over the environment (Eysenck, 1982).

In a global basis, we may classify attention as the ability to direct cognitive resources that allow the body to prepare for action, based on the demands operationalization needed at a given time. It would embrace all human behaviors, from the most conscious, such as writing an article, studying, painting a door paying attention to its details, preparing a meal, etc.; To the most unconscious, such as having a meal (what he eats first, how he organizes his meal on the plate, etc.) (Fehmi & Fritz 1980).

It has been a great interest to study attention and specifically to study the students' attention profile in order to better understand the act of teaching, in a teaching analysis logic, in order to know the phenomenon and to know if it can contribute to the learning, training and consolidation of performances in various sports modalities in an educational context (Petrica, Pacheco & Velez, 2000; Petrica, 2003; Petrica, 2010).

It is known that the sports variability necessarily implies a differentiated demand of attentional sub-constructs for the accomplishment of this same modality. Take chess for example. It is considered by most scholars as one of the sports, particularly one that is practiced at a high performance level, which most requires that the subject applies all his attentional requirements in order to concentrate on his game, move to move, but also be able to anticipate at least 5 to 7 moves (his and his opponent's) with the dozens of positions combinations in the board which this entails, as well as the control of his focus and attention peak (if in the initial phase of the game, in the intermediate phase, in the final phase or If, so are the athletes with the best results in terms of rankings, maintain this attention focus during all the chess game (Nejati & Nejati, 2012).

In addition to the different attention focuses, in different sports

classes we have studied this phenomenon in children in their passage to the age of puberty, between 10 and 15 years (particularly in the teaching and learning process in the course of physical education classes - Santos, Petrica, Serrano & Mesquita, 2014; Santos, Petrica & Maia, 2015; Santos, Petrica, Maia & Batista, 2016).

The combination of these three aspects: attentional focuses, attention to sports modalities and teaching / learning practices will thus be the analysis result in this article, which intends to give continuity to the work that we have been developing regarding to the learning of sports in young people (as already published in previous works, Santos, Petrica, Serrano & Mesquita, 2014; Santos, Petrica & Maia, 2015; Santos, Petrica, Maia & Batista, 2016).

Attention and sporting modalities - short- context

Although several researchers acknowledge the importance of attention in sport in different modalities (Abernethey, 2001; Cutton & Hearon, 2013; Memmert, 2009; Nideffer, 1993; Moran, 1996; Wulf, 2007; Peirez-Lobato, Reigal & Hernández-Mendo, 2016; Guillamoin, Canto & López, 2019) there is not a lot of suitable recent research that can present a specific and clarifying global theoretical framework. Until the end of the first decade of the present century, Boucher (2008) argued that «an adequate framework for studying the attention influence on sporting skills has not yet been established» (p.326).

More recently the study of attention in modalities such as football, baseball, and others has been a sample of what has been deepened in the perception of the importance of attention in several dimensions. For example, in a football match the players have to have a prospective attention ability (during the match) regarding the time that may have to continue in the game, which can be uncertain since there is no control in loco as in a game of basketball or futsal, where time is presented to the seconds, in the specific devices so that spectators, technicians and players can follow (see Hancock & Manser, 1998).

There has been a concern to clarify the differences between attention and concentration applied in sport. Although these terms are sometimes used as interdependent, Vernachia (2003) defined concentration as «the ability to act upon the world with a perfectly defined focus» (p.144). But what would this focus then be? (See this discussion in the American Psychological Association - Division of Exercise and Sport Psychology, 2014). Focus has been defined as the focal point of our attention. The attention would thus be simply what an individual is observing. When

put together (concentration and attention), it is understood that an individual who is focused has his attention focused clearly and at the specific time relative to the task at hand. Since an athlete has to develop the competencies required for competition, the ability to control attention in order to focus on the task requirements is essential to consistently execute those requirements and competencies (American Psychological Association - Division of Exercise and Sport Psychology, 2014).

Sánchez-López, Silva-Pereyra & Fernandez (2016) argue, therefore, that focused attention is essential for open skills sports, such as team sports and even combat sports (or others). They point out that, for example, since in combat sports, long periods of focused attention are required during competition, this can be one of the most relevant processes for high performance, where a proper movement or not can lead to victory or the fault; However, it still seems unclear whether a kind of attention more closely related to the maintenance of attentional focus (ie, sustained attention) is the key to the specialists performance in these disciplines, and much still has to be studied (p.1 -2).

Thus, according to the American Psychological Association, and particularly its Division of Exercise and Sport Psychology, 2014, the focus and attention may be of internal and external nature and also widened or narrow.

According to the same document, «when athletes are inwardly focused (i.e., thoughts, emotions, physical sensations), they are said to have an inner focus. Athletes who are facing the environment outside themselves (i.e., weather conditions) are using an external focus «(p.1). In terms of coverage / attentional range, a widened focus is when athletes are paying attention to many aspects at once (e.g., evaluating the opponent's alignment), considering that attention with a focus at a specific point (For example, the point of the ball where a golfer wants to hit) is considered a narrow focus. During competitions, athletes are often called to move between these dimensions in order to meet the necessary attention demands of the situation.

According to Nideffer & Sagal (2006) the overlapping of these dimensions leads to four types of attention control (page 384);

Table 1.
Adapted of Nideffer & Sagal (2006, p. 384)

Attention/ Concentration	External	Internal
Widened	Evaluation: Shifts focus to the general external environment that is often changing rapidly during a performance. For example, a quarterback who makes an assessment of the opponent's defense before starting a game.	Analysis: Shifts the internal focus to review thoughts and emotions during a performance. For example, a golfer considering his/her choices before approaching the ball for his/her opening shot.
Narrow	Action: Shifts the focus towards the external execution of a given competency. For example, a tennis player focusing attention on his/her service, while starting the whole process of moving the racket, ball, body, etc.	Preparation: Shifts the focus to be prepared to perform a certain skill (i.e. perform mental rehearsal). For example, a basketball player reviewing his/her self-talk before making a free throw.

It has so been accepted that attention in sports performance as well as in training is the basis of the technical, tactical, psychological and, of course, physical skills development. Thus, cognitive skills such as cognition / attention are essential for sports performance and have been for example extensively studied in combat modalities (Anshel & Payne, 2006; Blumenstaein, Bar-Eli & Tenenbaum, 2002; (2003) and Sánchez-López et al. ,2004; Unsal Tazegul, 2013, Sánchez-López, et al ,2016; Cuellar, Ramirez & Vargas, 2019).

In addition, there is the question of the attention role in training and sports performance if we consider the category of being considered an expert or initiating in a given sports modality (Abemethy & Russell, 1987; Sánchez-López et al., 2014, Williams & Grant, 1999).

It has been verified that the experts in a given modality can better modulate their attentional resources according to the specific requirements (Nougier & Rossi, 1999). Much has been studied an attempt to integrate duality between body and mind in sports training, and thus aspects such as attention have been raised to a relevant role, being in the new full attention models - Mindfulness, applied to sports (Scott -Hamilton, Schute & Brown, 2016); Etc.) the millennial yoga, the transcendental meditation, etc.) for the development of the attentional aspects for the improvement of the training and sports performance (Brefczynski Lewis et al., 2007; Tang & Posner, 2009, Emad et al ,

2017).

It is therefore fundamental to study and understand the role of attention at a particular moment of sporting activity: the act of teaching and learning a given modality!

Attention and teaching / learning of sports

Recent research by our working group demonstrates the importance of studying the tasks involved in the teaching / learning dyad, giving particular relevance to the comprehension of how the student studies and learns, and in a very particular way, how its attention is captured in a Classroom context.

As we have already mentioned, attention is considered a powerful mediating variable, since its preponderance in the teaching-learning process is clear, as well as the mutual influence between the teacher's behavior, the student's behavior and the learning outcomes (Petrica 2003). We have sought to know the aspects that capture students' attention in the various moments of the physical education class, of students with higher or lower school performance (Santos, 2009) and now we have been focusing on teaching different sports modalities (Santos, Petrica, Maia & Batista, 2016). We promoted, for example, surveys of subjects from the 3rd cycle of Basic Education, from a school, aged between 12 and 16 years old, to which the questionnaire (ATEST_EF) was applied in different sports modalities. As observed in previous studies, there are differences in the profile of attention in the different moments of the Physical Education class (Santos, Petrica, Serrano & Mesquita, 2014) and in the teaching of different sports modalities (Santos, Petrica, Maia & Batista , 2016).

We have already previously concluded (Petrica, 2003: Petrica, 2010 & Santos, 2009) that in the study of the relationship between attention and school performance in physical education classes, students tend to be essentially centered, in what they are and will do, or even with what they did, being less interested or attentive to what is the information provided by the teacher and / or colleagues, suggesting that the affective dimension related to the task deserves much less attentive focus on the part of the student (i.e., it focusing on the task and neglects other agents and relationships established with them).

Also Sicilia, Moreno & Rojas (2008) carried out an important study about the motivation and orientation for learning objectives of students registered in physical education classes, being these constructs related to the attentional profiles of students with the average age between 14 and 15 years old (the subjects of his study). The main objective of the study was to evaluate the differences between the motivational aspects and orientation for the school performance objectives of 983 secondary school students. Students from a large Spanish metropolitan area were studied with a questionnaire that included orientation towards their objectives (POSQ), motivational state (PMCSQ-2) and accomplished results (performance). The results showed three different constellations: 40.28% of the sample had a high motivational profile, 27.57% with a low profile and an intermediate constellation in which 32.15% presented an intermediate situation (due to their motivation). The curious thing is that this motivational profile changed according to their perception of academic performance (in a weak positive correlation).

The authors point out that some of the conclusions which allows them to think of practical strategies to increase the relationship between motivational style, attention and students performance would be to understand whether the student can be considered to be ego-oriented (as discussed above) , as defended in basis by Papaioannou, Marsh, & Theodorakis (2004) or for the task (Roberts, 2001). The ego-oriented student can be helped to adjust his academic experiences with his social, family, etc. life, in order to achieve a better life balance and perhaps a better academic performance, while the task-oriented student should be helped to guide his life to the various dimensions that comprise it.

Based on these data, it would be interesting to go to sources of learning from other disciplines than Physical Education and Sport. In addition to our studies, which appealed to the memory stimulation, to our question, we offer several response options with the aim of

promoting stimulation and recall, for example, in an interesting study with Chinese students who were learning the English Language as a second language (Wang, 2015), we used a classroom observation approach and recall interviews stimulated as research instruments; in that way the authors sought to study the factors that affected students' attention to what the teacher was communicating in the English language classroom, as a second language. The results revealed five factors, i.e., the students performed self-evaluation of their language knowledge, the way teachers taught classes (passing information), the role of students in participating in moments of effective English language training in the classroom, peers behavior and the evaluation of their own behavior by having to talk face-to-face with another element of the class (student or teacher). It is curious to verify that students paid more attention to the teacher and his speech when they realized that they did not understand him well, having only recourse to spoken language, when they were the initiators of a question or at least they started a moment of conversation in a second language, when colleagues reacted to their mistakes, and when teachers used various techniques to explain a particular point of view.

Such results appear to be supported by the fact that when a student is developing competencies of any order, where he feels more secure in accomplishing the task, he tends to neglect interaction with teachers and peers and to focus his attention on the task's specific performance, which can not always be considered positive, since the development of emotional and social competences in sport are well known and should be introduced and encouraged from the beginning of the learning of a sports modality in physical education classes (Birwatkar, 2014; Batista, Sixto, Honorio & Martins, 2016).

The same has been supported by studies in several areas of teaching and learning: when the student's attentional focus is directed towards learning and its performance, and not only for its result, its interaction tends to undergo a marked increase and much better results are achieved than is normal. Thus, for example, the teaching of mathematics has suffered a formidable increase when emphasis is placed on learning rather than outcomes (Mourshed, Chijioko & Barber, 2010), the same happens with the teaching of History (Knupfer, 2009), Chemistry (Childs, 2009), Portuguese language (Vieira, Ferreira & Schmi-Dlin, 2010) at pre-school level (Bullard, 2010), and even at university level (Canales-Lacruz & Rovira, 2017).

Darido and Souza Jr. (2007) suggest the introduction in physical education classes of activities that lead the student to go through several moments (temporary, during a single lesson) in which he/she sometimes feels secure, and therefore more performance oriented, and sometimes more insecure, and therefore more concerned with learning (using the introduction of innovative methodologies such as the introduction of playful activities in learning sports, promoting for example the experimentation of popular dances, traditional games, gymnastics, fights, gaming and games), trying to avoid that the student adopts a «do-it-yourself» attitude, but to learn in social interaction.

As Metzler (2000) points out, each physical education class should be characterized by its own social and emotional climate that is determined by the relationships established between the students and the students and the teacher, seeking to benefit the whole process of teaching learning and center the lesson's objective, not only in the focus of attention in learning, but to the fact that the teacher must realize that the attention and interest of the students floats during a lesson, according to their interest and duration. In this way, the teacher must adopt an equitable but also differentiated pedagogy directed to reach the objectives for each student and each class, alternating between the objectives directed to the various moments of the class and the learning objectives.

Conclusions

A possible paradigm changing supported by the mentioned studies could support suggestions for planning in new physical education classes, as already occurs in specific cases where the act of teaching, the attention of the students and their schedules during a physical education class

intersect with the need to respond to children and adolescents with specific learning conditions.

With the development of our studies, we will try to clarify what would be the best applied strategies to manage a variety of moments within a physical education class, for teaching and learning several sports, as well as the profiles of attention that can influence, positive or negative, the student learning.

As future lines of research, it is suggested that studies be developed that seek to know the thoughts of the students in the approach of different sports, that is, to what aspects they say to be attentive, so that this knowledge can be used to help, contribute and complement the descriptive study of the teaching process, as well as the relation between the school performance and its possible influence in the process of attention during the classes of Physical Education.

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