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Review Article

PEDAGOGICAL PRINCIPLES OF CONSTRUCTIVIST-ORIENTED TEACHING PRACTICES IN TEAM SPORTS

PRINCÍPIOS PEDAGÓGICOS DAS PRÁTICAS DE ENSINO ORIENTADAS AO CONSTRUTIVISMO NOS JOGOS ESPORTIVOS COLETIVOS

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RESUMO

O objetivo deste ensaio teórico foi apresentar princípios pedagógicos das práticas de ensino orientadas ao construtivismo nos Jogos Esportivos Coletivos (JEC). Especificamente, buscou-se situar o construtivismo enquanto perspectiva conceitual para orientar o processo de ensino e aprendizagem dos JEC, apresentando três princípios gerais e 14 princípios adjacentes, suas definições e possibilidades de aplicação prática. Os princípios gerais incluem: 1) facilitar a construção ativa do conhecimento; 2) facilitar a aprendizagem significativa (relevância pessoal); e 3) facilitar a participação (cooperação) social. Os princípios pedagógicos ora apresentados constituem uma matriz para orientar a investigação empírica sobre o ensino dos JEC no âmbito da formação e atuação profissional em Educação Física, assim como podem auxiliar no planejamento e intervenção nos JEC.

Palavras-chave: Pedagogia do esporte. Ensino. Construtivismo.

ABSTRACT

The present theoretical paper aimed to present pedagogical principles of constructivist-oriented teaching practices in team sports (TS). Specifically, the research sought to situate constructivism as a conceptual perspective to guide the teaching and learning in TS, presenting three general principles and fourteen adjacent principles, their definitions, and possible practical applications. General principles include: (1) facilitating the active construction of knowledge; (2) facilitating meaningful learning (personal relevance); and (3) facilitating social participation (cooperation). The pedagogical principles presented here constitute a matrix to guide empirical research on the teaching of TS in the context of professional training and practice in Physical Education and may aid in the TS's planning and intervention.

Keywords: Sport pedagogy. Teaching. Constructivism.

Introduction

Since the 60s the team sports (TS) teaching was marked by the use of approaches and models in which technical skills prevailed over the tactics teaching. Driven by a pedagogical debate in the school context and empirical investigation about TS teaching, from the 1980s, different proposals emerged as an alternative perspective to the teaching TS[1,2]. The main limitations in adopting rigorously systematized class structures and centered on the technique's teaching are in submitting the children to a high demand for the performance of the sports' technique, and in the absence of situations favoring the development of cognitive capacities for decision making and of the understanding regarding elementary tactical concepts[3].

The influence of constructivism was fundamental for a paradigmatic change in the process of teaching and learning in the teaching of sports[4,5]. The assumption that knowledge is actively constructed by the individual, as a result of a potentially meaningful interaction between that that he already knows and the new experiences with which he comes into contact[6], has provided conceptual bases for redefining the roles of teachers and learners and establishing new teaching practices[6-8]. In the propositions that stand out nowadays, the Game-Centered Approach[1,9], which includes the Teaching Games for Understanding (TGfU)

model[3] and its variants, as well as the Sport Education (SE) model[10], we stress the valuation of the cognitive dimension, especially of players' decision making, of the process of mediation of information about the learning and understanding of the game and, on the other hand, the social dimension, related to the interaction and collaboration with peers in the context of sports practice[9].

Models-based Practice (MbP) is a way of organizing the interdependent elements of curriculum, learning and teaching to achieve specific learning outcomes[1]. Each MbP presents its strengths and limitations in terms of instruction, tasks and management[2]. Efforts for the proposition, investigation, and overhaul of specific models and approaches for teaching TS in the international context[11-13], resulted equally in studies of implementation and assessment of proposals based on models of TS teaching in the Brazilian context[14,15]. Among the main challenges identified in those investigations, the difficulty of maintaining with fidelity the methodological characteristic of the original MbP stands out, especially in light of the particularities of the contexts in which they were designed (e.g. United Kingdom and United States) and their application in Brazil.

Constructivist-oriented teaching practices have basic principles that include facilitating the active construction of knowledge, promoting meaningful learning (personal relevance), and creating opportunities for social co-operation[6]. While comprising distinct orientations at some structural components, the main teaching models in TS show constructivist principles in their proposals. TGfU and its variants emphasize, for example, the learner's cognitive engagement, starting from the appreciation of the game and from its modified forms gradually incorporate the conscious learning of tactical concepts, for an integral understanding of the game[13]. Also, the personal relevance principle is considered as one proposes the progression and adjustment of tactical complexity of the game according to the level of learner's understanding through modifications by representation and exaggeration. In its turn, SE proposes greater balance in the opportunities for participation in the game and cooperation between learners, from the redefinition of roles and the work in teams[10].

The present theoretical paper seeks to contribute to the detailed description of pedagogical principles of teaching practices oriented towards constructivism in TS, to provide support for teachers or other curriculum writers to design models that are situated and appropriate to the circumstances specific to their contexts. In order to help widen teaching possibilities and scientific debate in the area, this theoretical essay aimed to present pedagogical principles oriented to the practice of constructivist teaching in TS. Thus, we present below: (a) the conceptual assumptions of constructivism; and (b) the pedagogical principles of general and adjacent constructivist-oriented teaching practices.

Conceptual Assumptions of Constructivism

Constructivism comprehends a set of theories of knowledge (epistemology) with implications in learning and teaching[16]. Under this perspective, cognition has an adaptive function and that allows organizing the experiential world, instead of discovering an objective reality. That is to say, individuals interpret the world in different ways, therefore, knowledge and reality do not have an objective and absolute value. One constructs "multiple realities". Knowledge is constructed by the individual from a continuous negotiation and reinterpretation/review of the world, in attributing sense and meaning to his reality[16].

Three assumptions fundamental to the object of analysis of knowledge construction emerge under the constructivist perspective. The first is related to the assumption that interactions between individuals and the environment are mediated by *action schemes or representational schemes*, which work as interpretation instruments to apprehend reality[17].

The capacity for learning from experience depends on schemes that the individuals have and/or use to interpret reality and give meaning to it. Fundamentally, they change continuously from review/reconstruction processes as individuals develop, becoming more generalized, differentiated, and progressively more refined and complex[18].

The second idea is associated with the importance of *constructive mental activity* in psychological processes, so that knowing is mostly, acting in an active way upon reality, changing it physically or symbolically from the action schemes or representational schemes that we use to give it meaning[17]. Acting upon reality implies a change of schemes or of the cognitive structure of interpretation of reality, through *assimilation and accommodation*[18]. Assimilation is understood as a cognitive process by which a person adds or classifies new knowledge into already existing scheme(s), affecting its growth but not resulting in the change of the scheme(s)'s form. When the new information is not compatible with existing schemes, the accommodation happens, which consists in creating and/or restructuring previous schemes, resulting in change in the cognitive structure (schemes)[16,18].

The third idea emphasizes the double process of assimilation and accommodation directing the permanent search for *balance* between the tendency of schemes to assimilate the reality to which they apply and accommodate themselves to respond to its demand[17]. The interactions that the individual maintains with objects – physical experience – and with people – social experience – attempting to understand and give meaning to them, imply continuous imbalance in the cognitive structure. Thus, the interaction between the individual and the environment can be described as a succession of states of balance, imbalance, and search for new balance at a superior and more complex level than the preceding schemes, that is, the schemes are less exposed to potential misfits than the previous structure. This process, named *equilibration* is a self-regulating mechanism of the passage from imbalance to balance, whose assimilation and accommodation processes contribute to the state of cognitive "balance", necessary to adaptation[16,18].

Pedagogical principles of constructivist-oriented teaching activities in TS

From these assumptions, the constructivist-oriented teaching practices include three general principles, which constitute the basis of teaching in the TS context, namely, facilitating the active construction of knowledge in games and skills; facilitating meaningful learning (personal relevance) in games and skills; and facilitating social participation (cooperation) in games and skills[6,7]. In an adjacent way, the present study proposes fourteen pedagogical principles, which constitute themselves as important elements for analysis and intervention in the TS (Figure 1).

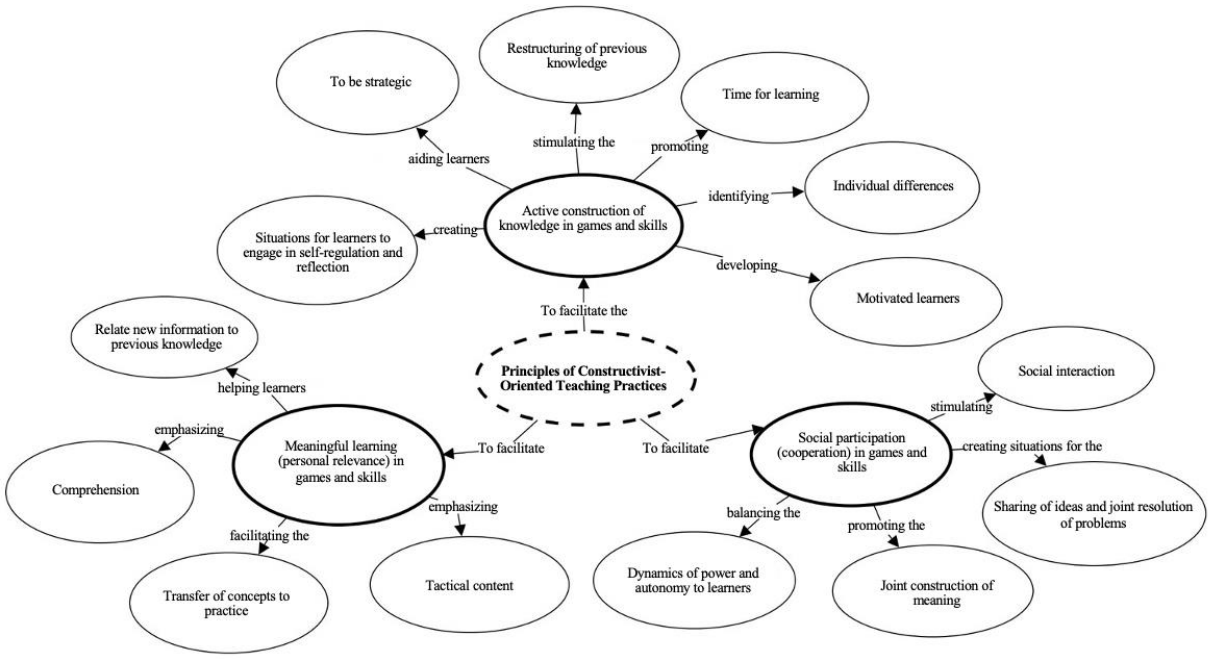

Figure 1. Pedagogical principles of constructivist-oriented teaching practices in TS
Source: Authors

To facilitate the active construction of knowledge in games and skills

This principle emphasizes the importance of the learner's active and constructive engagement in his learning (Figure 2). Knowing something, therefore, comprehends the construction of mental representations through exploration and discovery, which impose order and personal coherence to the experience and information[6]. In the context of team sports teaching, this implies creating situations that develop the learners' responsibility for their learning[19] and implies engaging them, actively, in activities of discovery and resolution of problems in which they may reflect, evaluate, as well as analyze information fundamental for learning. Furthermore, the teacher may aid the learners to develop cognitive strategies of self-regulation[20] and encourage them to use higher-order thinking skills to reflect critically, evaluate their learning, and restructure their previous knowledge[6,7].

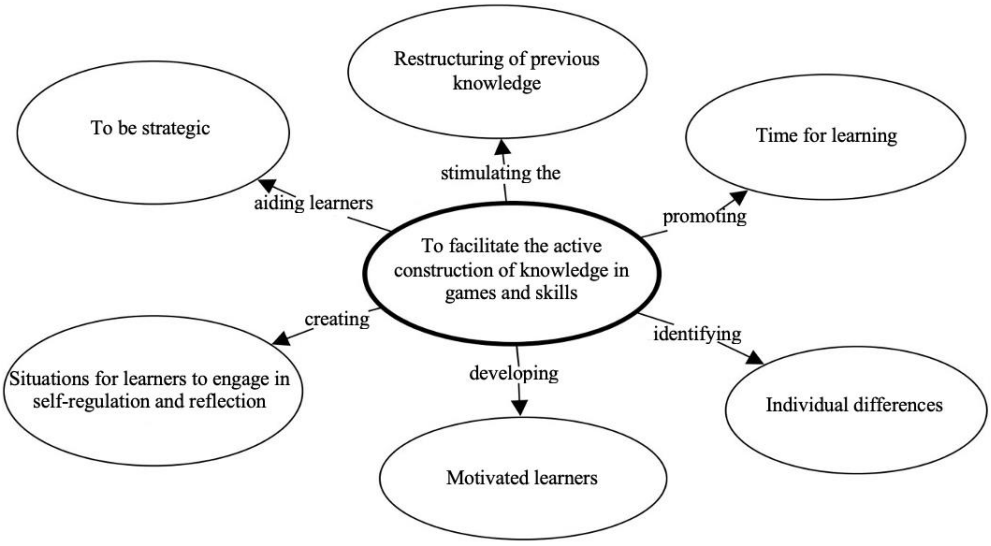

Figure 2. To facilitate the active construction of knowledge and adjacent principles
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To create situations for learners to engage in self-regulation and reflection

It refers to the creation of an environment that stimulates the construction of strategies by the learner to establish goals and evaluate continuously his learning, reflect on the mistakes, making him aware of his beliefs[21]. For this purpose, the teacher's role consists in progressively creating conditions for the learner to be able to plan goals, monitor the success, and correct mistakes when appropriate, which is necessary for effective intentional learning. The final aim is autonomy or personal adaptation to the regulating activity (metacognition)[20].

In the context of teaching in TS, the teacher may create situations in which the learners may evaluate their behavior in the game from pre-established criteria, record in an observation diary, reflect on the collected data, and subsequently, review their behavior in the game[20]. One assumes the possibility of a formative evaluation from a continuous process of elaboration of expectations; collection of information, in terms of measurement and interpretation; and the regulation of learning itself. A range of forms of evaluation, including diaries, portfolios, videos, writing, tasks of drawing and photography may help document learning aiding in the definition of and reflection on learning goals[22].

In this process, although the game is not considered an element of regulation of learning, it can be used as an authentic context for its evaluation and is a reference to the observation, analysis, and reflection of the situations lived. From a constructivist perspective, the game is a crucial moment in the process of learning, during which the learners can *reflect in action* and obtain intrinsic feedback about their performance. The information collected during the reflection in the action may at a later time be treated as a reflection on the action[20].

Beyond observation, analysis, and reflection, the TS adaptation into reduced game formats aims to decrease the complexity inherent to the learning of the game[23]. In this sense, manipulating restrictions of the game tasks is another way of regulating the learners' learning, which can be proposed both by the teacher and by the learners[23].

To aid learners to be strategic

It refers to the aid provided by the teacher in order that learners build strategies of resolution of problems[24]. Amid the game's complexity and the speed with which the actions occur, the learner finds uncertainty, faced with the several possibilities of action to achieve the aim of the game[25]. That is to say, the TS demand from learners skills to process a large amount of information in a short time and demand cognitive capacities to respond to problems during the game. The learners' cognitive capacity consists in interpreting and ordering information in conscience, for the recognition, memorization, and processing of the appropriate information used in decision-making and subsequent execution of the action[25].

Thus, it is necessary to create opportunities for learners to engage in activities and games that have problems to be solved[6,7]. The definition of the problem by the teacher is the first step to aid learners in elaborating answers and/or strategies. The literature in the area reports that some problems may originate from typical situations of the game, as well as be related to the creation of games[20]. In the second place, so that the learner realizes what should be solved, it is important to make the problem explicit via direct explanation or discovery. In the literature consulted, some constructivism-based proposals emphasize the discovery of the problem through the appreciation of the game by learners[26]. Then, the teacher may pose questions for different purposes, "What?" "When?" "How?", which seek to conduct the learner to an expected answer according to the aim; for helping the learner to diversify his process of thinking, he may use questions as, "Why should you position yourselves closer to the net for finishing?"; and yet for stimulating learners to analyze options and elaborate strategies, one may use questions as, "What behavior can you adopt when you are with the ball?"[26].

If learners do not succeed relative to the adopted strategy, they may reflect on the conditions of the failure. As soon as a solution considered "coherent" for that situation is found, learners may consider having solved, at least temporarily, the problem. The reflection on strategy that led to the decision-making "adequate" in solving the problem promotes the learner's awareness about its use[20]. At last, the possibility of reapplying it in other situations of games leads the learner to comprehension; he stores it as action rules and elaborating increasingly complex answers becomes possible[20].

To stimulate the restructuring of previous knowledge

It relates to the facilitation of the review of existing knowledge, in order to reformulate new beliefs about certain information[24]. It is recommended to use strategies for aiding learners to review their "naive" beliefs about TS, in order to elaborate new more complex beliefs and with greater explanatory power[20]. Differently from the behavioral perspective of learning that deals with learners as a "tabula rasa", constructivism proposes that learners, even before receiving formal school education, acquire experiences about the world and bring to the TS learning context prior beliefs relative to the cultural forms of games – as basketball, soccer, or volleyball – that influence the way they interpret, organize, and process new information[13].

In the TS teaching context, the characteristics of the dynamic and unpredictable environment evoke the simultaneous processing of a vast range of conceptual information[20]. The cognitive conflict teaching strategy has been used since the 1980s to facilitate the reconstruction of learners' beliefs. Before any attempt of intervention in teaching, enabling the elicitation of learners by clearly exposing their preconceptions in the realistic context of a game, is considered a decisive factor for success in the cognitive conflict. This implies projecting adequate learning activities to initially activate the (no longer unknown) preconceptions of learners and then challenge them through questioning, video analysis, among other strategies that have the potential of showing them that some of their beliefs can be changed and perfected[27]. As soon as learners experience the contradiction between their preconceptions and the new scientifically accepted beliefs (e.g., tactical concepts), the process of conceptual change is initiated. This awareness motivates the learner to solve the conflict, be it by trying to review/organize his existing knowledge or adding new information[27].

To promote time for learning

It refers to the opportunities for learners to dedicate themselves to practice to perfect more and more their knowledge[24]. Learning is a complex cognitive activity that requires considerable time and practice about a given domain. In this direction, the investigation in TS demonstrates that the individuals need much practice time to build deep knowledge about the game[25].

Some proposals of the literature suggest the need for encouraging learners to build sports competence and literacy. Considering the need for concentrating greater time in the learner's contact with the content, SE, for example, suggests that sport times replace the traditional teaching units[10,12]. This implies promoting sufficient time to restructure his prior beliefs, with the purpose of deepening some theme instead of covering a large quantity superficially. The recommendation is that the curriculum be presented from the whole to the parts, with emphasis on wide concepts and more complex skills[12].

To identify individual differences

It deals with the strategies to identify individual differences in learning[24]. Diagnosing learners' domain areas, giving special attention to their interests, and identifying

different learning styles, to provide experiences more adjusted to their needs, are recommended. Among the proposals of the literature, VAK (Visual, Auditory, and Kinesthetic) has been used as a reference for diagnosing learning styles in the classes of Physical Education and sports[28].

Visual learners, for example, will learn more via the visual channel, and should obtain as much visual stimulation as possible. In this case, one may foster activities in which learners have to observe, read, and study (e.g., charts, videos, infographics, concept maps) since the comprehension about a given topic is broadened when they receive information and instructions via the visual channel. Learners that have an auditory style learn better via hearing, by oral explanations, conversations, debates, lectures, among others. In turn, learners that use the kinesthetic style learn better by experience and active participation in different tasks, games, and roles played in the classes may aid in the understanding of information[28].

To develop motivated learners

It approaches strategies that aim to encourage learners to be determined in the active participation in activities to the extent of making them intrinsically motivated[24]. Motivation is a psychosocial process characterized by behaviors that an individual considers vital for his development[29]. In the TS teaching, motivation is considered one of the primary factors for learning to occur[30]. Thus, many TS teaching proposals grounded on constructivist ideas[3,9,10] emerged from a concern of educators and researchers, toward learners who would not experience playing motivation in a technique-centered context.

Therefore, it is recommended that the teacher provide opportunities for learners to engage in diversified and fun games and tasks, which provide the construction of competencies, and mainly, enthusiasm for sports practice. Beyond engaging learners in a game or activity, it is important to provide reliable justifications on the activity or game being relevant and useful[30]. To maintain the learners motivated it is important to create a positive climate, with positive feedback or informative but using positive intonation. These strategies informed in the literature make it possible to develop enthusiasm toward the prolonged sport practice[12].

To facilitate meaningful learning (personal relevance) in games and skills

This principle establishes the relationship between the learner and the content. Particularly, how much the activity makes sense for the learner, in that learning becomes effective when he comprehends its use in real life (Figure 3). Meaningful learning is a process by which new information relates to schemes in the learner's cognitive structure, anchoring in preexisting concepts, which are organized in hierarchical structures, in which more specific elements from knowledge are connected to more general elements[31]. In the TS teaching, this implies considering learners' previous knowledge and experiences in the organization of learning activities, as well as guiding them on how to construct a connection between the acquisition and application of knowledge, using activities and examples that are relevant for their life experience and previous knowledge[6,7].

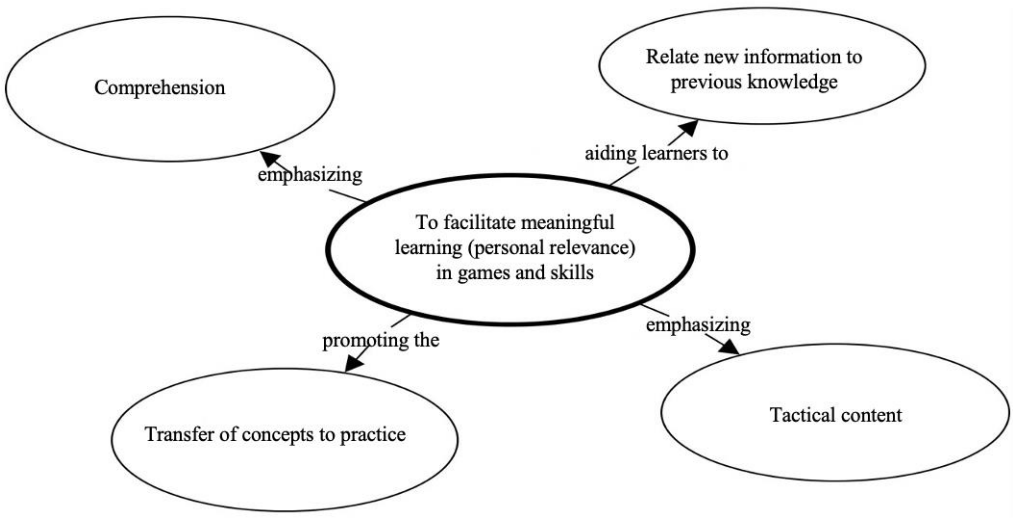

Figure 3. To facilitate meaningful learning and adjacent principles.
Source: Authors

To aid learners to relate new information to previous knowledge

It refers to the creation of teaching situations that evoke learners' previous experiences, and that establish a link between the previous knowledge and the new knowledge[24]. In the emerging teaching proposals of TS, the game is considered a "cognitive organizer" used deliberately to help learners recover, activate, and learn information, making it familiar and meaningful[32]. For this purpose, it is important to initially consider the selection of games that learners already know[33].

Those "cognitive organizers" contribute to the alignment between schemes, be it for consolidating existing skills, knowledge, and understandings or preparing learners for new learning challenges[32]. The concept of "advanced organizer" is consistent with the constructivist perspective that the new knowledge is constructed on an anchor conceptual base, which forms a mental structure named schemata (schemes)[32]. In summary, the use of known games leads to the development of subsumers (concept that allows giving meaning to new knowledge) that prepare and encourage learners for subsequent learning[32]. Furthermore, the subsumers promote their interpretation of new content and activities as relevant, challenging, and interesting[33].

In the TS teaching context, the forms of game are composed of tactical content and possibilities of technical actions, in which the teacher must present the content to learners by way of a careful analysis and subsequently guide them in the discovery of the meaning[32]. In this way, it is the role of the teacher to aid learners to understand what they are learning, why to learn certain content, and how it relates to broader aspects of their lives[33]. In this process, the use of examples, analogies, and questions is considered investigation-oriented strategy, which places learners in a way of thought and discovery production[6].

The guided discovery style facilitates the engagement of learners in the association of concepts, principles, competencies, and actions of a given task[26]. The questioning carried out throughout the class may be directed to aspects of strategy, tactics, technique, rules, concepts and involves the following main questions: "What?" "Where?" "When?" "Why?" "Who?" "How?". As for the function of questioning, it is possible to explore it at the beginning or end of the class, to recall or require an answer relative to the learner's memory: "According to what we learned last class, how does one earn the point in volleyball?" or "What have you learned in class today?"[26].

To emphasize comprehension

It concerns encouraging comprehension by creating open learning situations, which go beyond repetition[24]. Understanding evokes the perspective that learning is not only mental but demands the capacity to use those representations to obtain a performance adjusted to diverse situations[34]. One assumes the idea of comprehension as performance, in that individuals think and act with flexibility around the mental representation that they built from experience[34].

The relationship between previous knowledge and content to be taught is not always identified with clarity in the TS teaching and learning process, which demands from the teacher the ability to mobilize a set of pedagogical knowledge that transforms this content to establish the connection between the known and the new[24]. The pedagogical focus is on developing the learners' knowledge about the principles of the game, from which the answers of movement are derived and comprehension must be explored by means of perception and decision-making skills[32].

In the TS teaching, proposals that emphasize comprehension, such as GCA, foster a pedagogical intervention that privileges tactical principles, and focus on processes of organization and presentation of the content[1]. The interaction between this content and the learner should be carried out by applying learning tasks that represent a real problem, loaded with decision and with possible resolution. Comprehension becomes a demonstrated ability toward dealing with the problems of the game[32]. Opportunities in which the learners must explain, solve a problem, elaborate an argument, build a product, create a game, or suggest modifications for the games, not only demonstrate the level of current comprehension but also expand it into a deeper level of understanding about the game[1].

To promote the transfer of concepts to practice

It stresses the creation of situations that enable the learner to apply what he learned into real game contexts or new situations[24]. The transfer of concepts is conceived as the comprehension of an answer to be given in a given situation that influences the elaboration of an answer in another situation, which contributes to the meaningful learning, where knowledge is considered useful, capable of being put into practice. The answers to the new situations are based on the assimilation of new pieces of information in connection with a previously learned situation, where the learner provides an answer supported by a similarity or analogy between them, resulting in the transfer[32]. Therefore, the transfer is the element that distinguishes the mechanical learning from the meaningful learning for it lies in the fact that this latter is used to develop the capacity to transfer what was learned to other tasks[32].

Team sports games make up a group named cooperation/opposition sports and have as a resulting action the constant interaction between players, who cooperate between themselves in opposition to the other team[35]. These modalities have common elements, an implement; an environment where the game happens; a goal to be attacked or defended; a team and opponents; and rules[35]. The TS's common characteristics constitute a basis for the norms that direct the game as to ball possession. These norms are defined as operational principles of attack (maintenance of ball possession; progression to the opponent's field; completion to goal) or defense (recovery of ball possession; containment of opponent advance; defense of the goal)[35].

To emphasize transfer in the TS teaching, it is possible to select games (sampling) that offer a multiplicity of experiences and allow showing similarities and differences[13]. The system of classification of games (e.g., invasion games, non-invasion games/net and wall) allows recognizing the similarity and difference between distinct modalities, confers the opportunity for learners to learn tactical and strategic knowledge that spans modalities of similar internal logic, and promotes transferability of the competencies of the game[35]. As the

forms of the game are learned, situations of a given game can be transferred to a similar game within a category. Teaching, therefore, must promote this connection between games and is considered in the TS literature a key element for qualifying learning[2].

To emphasize tactical content

One seeks to subordinate the teaching of technique to the teaching of tactics[24]. The emphasis on tactics for teaching TS incorporates learning into the realistic context of the game, engaging learners from the beginning in modified forms of games or in the real game, depending on their level of understanding[23]. The learning of technical elements is introduced according to the need for improvement and attribution of meaning in the real situation of the game[2].

As per the literature related to game-centered teaching models[9], for emphasizing the tactical content it is important to carry out the adjustment of tactical complexity according to the level of understanding of learners. Including less tactically complex game categories, such as games with target, score/race games, with subsequent progression to net/wall games and finally invasion games that are considered more complex, is recommended. Another possibility is to implement a thematic approach in the first stage of teaching with explicit focus on categories of games, to later consider matters specific of the sport.

Another aspect is the identification and handling of constraints that may be explored through modifications by exaggeration in the rules or structure of the game, to direct the emphasis of the task to a tactical principle and/or competencies[1]. In this way it is possible to highlight it relative to other tactical principles, to provide the learner with a better understanding of the game, as well as help him solve the problems imposed by the game/task.

To facilitate social participation (cooperation) in games and skills

This principle comprehends the creation of cooperation from social interactions as an essential part in learning (Figure 4). The premise is that learners learn better via negotiation, cooperation, teamwork, and commitment with peers[14], from the social relations between teacher and student and student-student. Thus, one proposes that teachers and peers are important agents in the process of learning skills and concepts inherent to sports content[19]. In this sense, one of the roles of the teacher in teaching TS is to provide opportunities for learners to share ideas and solve problems together, interact with classmates and groups, engage in discussions and negotiations of meaning, and be sensitive to each other's ideas[7]. Furthermore, the responsibilities of the teacher and learners must be shared through the dynamic balance of power[36].

To stimulate social interaction

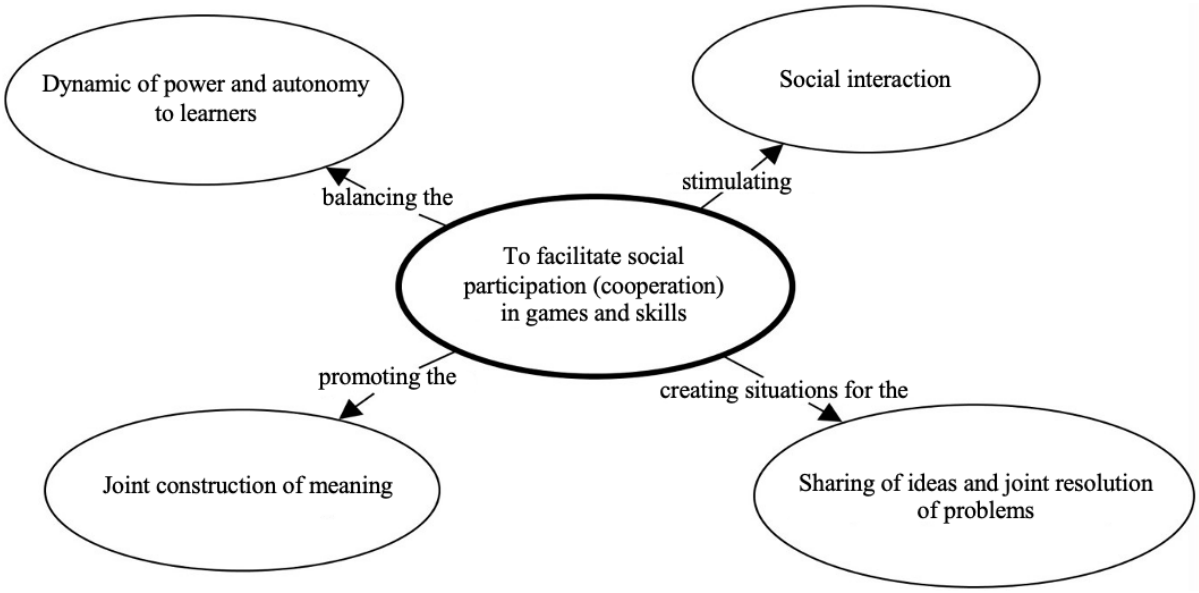

Figure 4. To facilitate social participation and adjacent principles.
Source: Authors

It refers to the creation of an environment that encourages social interactions, to shape learners' educational experiences and contribute to learning[6]. By way of interaction, therefore, learners share ideas, expose limitations, ask questions, listen to and observe with attention the other. Thus, it is possible to coordinate the actions with the others and then develop more elaborate social organization systems, which in turn will change the structuring of their thought[36].

In this process, interaction also fulfills a regulating function, which in practice may happen from the following four interdependent components: game, observation, debate, and script for recording strategies of the team[23]. The learners' observation on the game, exchanges and debates between them, with the aim of solving problems found in the previous game, followed by attempts and verifications during the matches, will provoke divergent thoughts and facilitate learning.

Furthermore, this principle may be promoted by the organization of an environment in which learners assume and interact with different roles (e.g., trainer, scorekeeper, referee, leader, journalist), integrating them into different groups to perform diverse functions, cooperatively, as recommended by some TS teaching proposals in the literature, following the example of Sport Education[10,12]. Being an active member or feeling affiliated by way of the different roles assumed in the team allows learners to cultivate a feeling of belonging and keep engaged in the learning of the game[12].

To create opportunities for the sharing of ideas and joint resolution of problems

It concerns the creation of an environment propitious for learners to share their ideas and develop joint strategies for solving problems[6,37]. In this aspect, it is up to the teacher to give support, create, intentionally, spaces where the learners may manifest their ideas, and act as a facilitator/mediator of communication, in the support to the elaboration of strategies for resolution of problems cooperatively, and in raising learners' awareness on being sensitive to the ideas and mistakes of each other[38].

One of the strategies informed in the TS literature to encourage the sharing of ideas and joint resolution of problems is the "debate of ideas"[37]. The debate deals with an organized discussion related to the game that involves communication not only in the sense of speaking

but also knowing how to listen to a counterargument, for offering an opinion, avoiding verbally hurting the other, and sustaining an argument. At the time of the debate, instead of asking closed questions, involving recollection, teachers must consider asking open and divergent questions or using other approaches that may stimulate learners to assume responsibility for their learning through debate, dialogue, and reflection[37]. One suggests, therefore, that the effective learning of the TS may occur in situations that demand divergent thought on the part of learners.

From the analysis of the game and identification of the problem to be solved, the debate's aim is to reflect on strategies that may help solve the problem(s) in question, be it tactical or technical. By doing so, learners acting as players or observers (referees, leaders, trainers, scorekeepers, journalists) and the teacher function as a learning community[37]. After the elaboration of the socially shared action strategy, testing in the game, and joint reflection on the obtained results, performing exchanges between observers and players for them to experience different roles in the game and in the debates is recommended[37].

To create situations for the joint construction of meaning

It refers to the creation of opportunities for learners to negotiate, collectively, the meanings learned about the game. The significant character of social participation (cooperation) in TS translates the importance of the process of negotiation of meanings, in which one learns by the reconstruction of previous experiences, how to relate to peers and teachers, which affects the competence and skill in the game[36]. The negotiation of meanings is a process by which learners arrive at a clear understanding regarding a given topic with each other[39].

The possibilities of widening learning through negotiations occur when teachers and peers perceive, help, and guide the other learners in their own reflective processes around how to act in the sport. They may be facilitated by means of questions or suggestions from learners, or with teachers providing alternatives. The consulted literature suggests a curricular negotiation between teacher and learner, in which learners suggest activities, explore alternative ways of solving tasks, or suggest how to divide the class into teams or groups[39].

This pedagogical action makes implicit negotiations explicit and the explicit negotiations increasingly qualified[39]. For this purpose, communicative competence is essential to foster the negotiation of meaning[36] insofar as they share information, broaden, redirect, reject, reinterpret, change, from a continuous process of giving and receiving, of influencing and of being influenced[39].

To balance the dynamics of power and provide autonomy to learners

It comprehends the shared distribution of power, in which the teacher concedes greater power and autonomy to learners in given situations, in a joint work, of collaboration[12]. In this sense, the teacher becomes a co-participant in the TS learning and encourages learners to assume responsibility for their own learning, eliciting gradual opportunities for new power relations to operate[38].

Autonomy comprehends a basic psychological need, which concerns the subject's ability to govern himself[40]. In the TS teaching process, the recommendation is that there occurs a gradual transfer of responsibilities for teaching and process of learning according to the learners' level of knowledge and experience. For example, by initially sharing and managing the class's equipment and material in pairs or small groups or providing suggestions of change in learning activities. At another time, by dividing the responsibility with learners to conduct and manage learning activities in pairs or small groups, observing classmates and proving feedback. And finally, by keeping learners responsible for

fundamental aspects of the class, that is, development of content, selection of tasks, technical and tactical decision-making, feedback, instructional leadership, and class management[12].

Conclusion

The present theoretical paper aimed to present pedagogical principles of the constructivist-oriented teaching practices in TS. For this purpose, we approached the constructivism conceptual assumptions that have implications for learning and teaching in the TS. From this, three constructivist-oriented pedagogical principles were discussed. They were: facilitating the active construction of knowledge, facilitating meaningful learning (personal relevance), and facilitating social participation (cooperation). Furthermore, fourteen adjacent principles, their definitions and possibilities of practical application were presented.

The pedagogical principles here presented constitute a matrix to guide empirical investigation about the teaching of TS in the context of education and professional practice in Physical Education. From the pedagogical point of view, these principles may aid in the TS planning and intervention since they allow interpretations and applications more situated and contextualized to the different intervention contexts. Although these principles are interdependent, they can be emphasized at different times, so that the teacher may create his own action script, avoiding the reproduction of models. At last, the pedagogical principals may provide support to initial and continued education, in the construction of knowledge about constructivist-oriented teaching practices in TS, helping teacher trainers promote conceptual change in future and current professionals concerning the teaching of sports in the direction of pedagogical actions connected to the contemporary literature in the area.

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