(Review article)

(บทควา | วิทยาศาสตร์การโคช

TEACHING AND SOCCER TRAINING: AN APPROACH THROUGH A TACTICAL PERSPECTIVE

Filipe Clemente[1,2], Rui Mendes[2,3,4] & Rúben Rocha[1,2]

[1]Faculty of Sport Sciences and Physical Education – University of Coimbra

[2]Robocorp

[3]College of Education – Polytechnic Institute of Coimbra

[4]Interdisciplinary Centre for the Study of Human Performance

----

ABSTRACT

Soccer, for their characteristics, falls into the category of collective sports games (Garganta, 2002). Regardless of other characteristics, is the opposition between the elements of two teams clash in the relationship and cooperation between team-mates, occurring in a random environment, that reflect the essence of the game (Garganta, 2001).

The organization of sports training and education should be a useful element for improving the performance of a particular person, group of subjects or learning context of a specific task (Davids, Button & Bennett, 2008). It is the responsibility of the coach, have multidisciplinary competences that enable to manipulate a set of elements that promote the development of tactical knowledge and decision making of the players, enabling a real increase in the capacity of players to the game matters: technical/tactical efficiency of the team. Thus, a coach's perspective, the proper handling of ecological elements of training may address the players' attention to relevant sources of information, acting in order to use the information that will achieve the objectives (Araújo, et al., 2005). This paper discusses briefly the importance that the tactic should have in each intervention of the soccer coach during planning the training or teaching.

INTRIDUCTION

Generally, soccer and science have been accompanied throughout its evolution. The interaction between these two elements resulted in significant increase of scientific studies on the subject, reverberating up in the quality of development of soccer, and on its turn on the competitiveness of the game. Proof of this are the results, less uneven between professional teams in their disputes. Soccer has become dependent of science to evolve, and without it, would not have achieved the actual level of current income and competitiveness.

This evolution was reflected in different training methods, resulting from the scientific paradigms. For much of the twentieth century there was a strong tendency to rely on an approach quite relevant fragmented and analytical trainingwith emphasis on conditional capabilities originated from conventional training by methodologies coming from Eastern Europe.

This conventional training, largely modulated by the authors of sports training like, Matveev, Arosiev, Kalinin, Tschiene, Verchoshanskij, Bondarshuck or Bompa, focused mainly on conditional capabilities, training them to some extent, descontextualized that the game was. Basically, these methodologies are excellently suited to team sports without opposition-cooperation and occasional tournaments throughout the year where they could achieve great heights in order for these moments. An advocate of this approach is José Mourinho (cit in Lourenço & Ilharco, 2007) about this comment:

One thing is an individual sport with a man being prepared for a particular purpose and another is a team sport where a man alone is worth nothing ... The Matveev is indeed a bible for individual sports, but of little value to collectives.

Apart from the work unbundled of the context, conventional methods, supposedly, are not assumptions as the ones of collective sports games of today, where teams play regularly throughout the year, sometimes with two games per week, and where they must find the its best performance during the season, otherwise they will not meet their targets. Beyond this fact, the training of conditional capabilities should not be disintegrated than what features the game: tactics, technique, ball! In fact, this is the essential element that ensures the proper performance of the team. This thinking has led to a gradual disuse of the conventional method, replacing it by the integrated training method. In fact the following example provided by José Mourinho (cit in Ilharco & Lawrence, 2007) is fully observable:

What is the fastest man in the world? Let's assume that is Francis Obikwuelu, who makes less than ten seconds in one hundred meters. It's very fast and I do not know any football player who can match a race of one hundred meters. However, in a soccer match, a team coached by me, 11 against 11, the slowest would be Obikwuelu! ... The speed in soccer is related to situation analysis, reaction to stimuli and the ability to identify (perception) ... if one of my players is marking Obikwuelu, which has, compared to football players, a huge explosion of start-up, this will require my player to always start later in deselection. But because soccer is not his area of performance, Obikwuelu will in all likelihood, move to where he shouldn't, so my player will be able to be near him when he is able to receive

the ball. In order to analyze the speed, a slow player from the traditional view is, after all, a fast bowler in a complex perspective ... this is all the complexity and the man is a complex whole in its context, so working individual qualities and/or descontextualized from the complexity of the game is to me a serious mistake.

The integrated method continues to be heavily used, especially in major European leagues (England, Spain, Italy). Despite the change of some components, the theoretical assumption of conventional training are equals. In fact, instead of continuous running, there is a ball, calling for continuous running with the ball trying, thus approaching the task of the soccer game. However, the thought remains similar to the conventional training, where the most important assumption is the training of conditional capabilities, just bringing to it an extra motivation, the ball.

Relatively to learning of football, the thought until the 80s, was focused almost exclusively by the analytical work, focusing on individual development of the technique. In this case, the variability was a noise factor, and the opposition did not happen until an eminent domain technique and the background with the game was reduced to a considerable level of training

This analytical work, centered on technical development, tried to be countered by Bunker and Thorpe (1982). According to the authors' perspective, the basic justification of their model focuses on the fact that any individual can participate in the game with technical limitations and even with these limitations can be very competitive (Thorpe, 1990, p.90). This method doesn't deny the necessity of teaching the technique, claims only that the specific job of the technique arises after the game and a contextual assessment of their need from modified game situations (Graça & Mesquita, 2007). In the background, emphasizing the contextual and tactical component of the game, as the guarantor of learning.

Teaching and sports training, was governed for much of its history, an analytical thought, segmented and descontextualized of what is the essence of soccer: the opposition / cooperation. In fact, lived long time enough on the simplistic scientific paradigm. However, with the progress of science, we are faced with the opening of complexity, which explains the phenomenon of the importance of tactics. If the opposition / cooperation and its inherent complexity is the essence, tactic should be a central concern of the soccer coaches, trying to enable their players to the most important components of the game: the quality of team play.

This paper will seek to describe briefly the need for work focused on tactics in the areas of: 1) learning sports through the model of Teaching Games for Understanding and; 2) sports training, by emphasizing the tactical periodization model.

Learning soccer: approach through a tactical essence

The model of teaching games for understanding (TGfU), is originally from the authors' Bunker and Thorpe who in 1982 published the paper *A Model for the Teaching of Games in Secondary Schools*. The authors argue that the model can't accepts that the tactic should wait for the development and refinement of the technique, emphasizing that the

teaching games for understanding focus on tactic, rules and modified equipments that promote student interest in practice (Bunker & Thorpe, 1986). The basic justification of the model focuses on the fact that any individual can participate in the game with technical limitations and even with these limitations can be very competitive (Thorpe, 1990, p.90). Instead, the fact that mastering the technique does not mean that in situation of formal game, with constraints of various kinds, the technique by itself, guarantee success. Although usually the skill level is inferred from performance in the absence of disturbance, there is no doubt that the ability to adapt to the disruption constitutes a key element in its evaluation (Tani, 2005).

This teaching model can be embedded in the perspective of the tactical work as essential support for learning. The TGfU guided by four pedagogical principles (Griffin & Butler, 2005): 1) selecting the type of game, 2) the modification of the game by proxy, 3) modification by exaggeration and 4) the adjustment of tactical complexity .

In this model, the game, objectified in a modified concrete form, is the central reference for the learning process, and that it gives coherence to all that is done one productive in class (Graça & Mesquita, 2007). Thus, all the moments of learning centered on the game and its constituent aspects, such as tactical awareness, making decision, the necessary exercise with, among others. The TGfU doesn't deny the necessity of teaching the technique, claims that only the specific work of the technique arises after the game and a contextual assessment of their need from modified game situations (Graça & Mesquita, 2007).

A key highlight in the model relates to the enhancement of learning transfer system, in other words, the influence that the practice has on a skill in the performance of the same type, or similar, or in a different context in the acquisition and learning of another skill (Godinho, Mendes, Melo, & Barreiros, 1999). The concept has been discussed prominently in the light of behavioral and cognitive approaches, however, trying to transfer the concept to an ecological approach, it may be said that the transfer can be understood as perceptual narrowing the tactical implications of a similar set modalities, facilitating a more rapid identification of information as well as improving the screening that it concerns.

Following this transfer concept, Hopper and Bell (2001) refer to the grouping of games for its classification as structural similarities, namely: 1) target games, 2) net/wall games, 3) beat games and 4) territorial invasion games. Thus, the tactical component for each group, is a key element for cross-learning of students, promoting the transferability of skills recognition information of the game. With this it is meant that by practicing an invasion game, students will acquire perceptive skills related to all team sports involving this type of element.

The teacher's role in applying this model (Turner & Martinek, 1999) lies in: a) establish the form of game by the teacher; b) observation of the game or exercitation by the teacher; c) the teacher and the students investigate the tactical problem and potential solutions; d) observation of the game by the teacher and intervene to teach and; e) the teacher intervene to improve skills.

From this perspective, it is important that the teacher in selecting the appropriate form of play, worry about presentation forms that has account the conceptions that students bring to the learning situation and which can be seen by students as forms of play credible and authentic (Graça & Mesquita, 2007). According to these authors, understanding emerges as an interface between the form of game taken, and the game concept, whose function is to focus teacher attention on helping students make the connection between the purposes of the game and modified form of gambling proposal.

The TGFU has assembled a set of empirical evidence that try to support their relevance. Using specific tests of declarative and performance evaluation, we measured students' knowledge, their performance in game regarding the decision and implementation and evaluation of the technical level (Turner & Martinek, 1995) in comparison with analytical models of teaching. However, the typical strategy of comparing approaches (analytical and ecological), methods, styles, strategies, or teaching procedures has consistently led to inconclusive results, to accusations of bias in research, promotion of abusive generalizations, based on a reductionist conception (Graça & Mesquita, 2007). Thus, different models should not be compared because the same gives rise to distinct due to different purposes (Metzler, 2005). Therefore, it makes no sense to compare approaches, when the essence of both is different. It is necessary to assess the real importance of each approach. Further, only through assessment tools in context of quality of game play, among which, the Game Performance Assessment Instrument (GPAI) (Oslin, Mitchell & Griffin, 1998) and Team Sport Assessment Procedure (Gréhaigne, Godbout & Bouthier , 1997) was able to open prospects for educational use in the service of the alignment of education as an authentic assessment (Graça & Mesquita, 2007). Thus, studies on the TGfU (Laursen, 1996, Mitchell & Oslin, 1998; Wallhead & Deglau, 2004;) show its real value as a teaching method. Regarding the study of Mitchell and Oslin (1998), was shown the ability of transferability of learning, noting that the understanding gained in the tactical lessons of a particular sport was transferred to new understanding of related games. In another study, Wallhead and Deglau (2004) investigated the motivation of students when subjected to the method TGfU. The results showed that the model provided a positive experience, not threatening to take on challenges, rewarding the skills and tactics intrinsically motivating for the pleasure afforded by gaming activities. On its turn, Laursen (1996) gave the students the initial level of teachers, 48 sessions of 2 hours on the methodology of teaching through the game, having analyzed from qualitative methods, that the majority of students already had a conceptual structure consistent with the ideas of TGfU and at the end of the sessions showedthemselves identified with the training.

Soccer training: approach through a tactical essence

Vilar, Araújo and Castelo (2010) analyzed the theoretical perception of 24 certified level IV coaches in relation to models of soccer training. The questionnaire aimed to study: 1) interaction of income factores, 2) orientation to a collective conceptual model, 3) nature of the training exercise and 4) relationship of exercise with a competition. The

study result from surveys of managers concluded that the tactical component, should lead the process of training and that all factors should interact simultaneously in the task (complexity). Apart from this, the conceptual collective model should be the guide element of the training process and exercises should be conceptualized in its direction. Also the training of decision-making was considered very important, despite the vagueness of the respondents as to know how this works. Finally, another relevant aspect of it was held to underscore the need to analyze the competition and training as a way to build subsequent tasks of practice. Thus, the study stressed that the concern of the coaches with the highest certification in the tactical component, as well as its importance for subsequent phases inherent in the training.

The nature of the game is characterized by the dynamics of relations of cooperation from team colleagues that aims to transcend the opposition and therefore, the problems faced by teams and players are from tactical nature (Guilherme Oliveira, 1991; Throat, 1997; Silva, 2008). The tactic is the interrelationship of the factors of the game: space, time, team partners, ball, opponent, directly under the ultimate goal of sport and tactical objectives of general and specific action (Bayer, 1986). The tactical knowledge is knowledge in action, which enables the practitioner to make tactical decisions (Garganta, 2006). The tactical ability of the practitioner is formed by the interaction of cognitive processes that trigger decisions, which objectify the motor execution directed to obtaining the desired goals (Matias & Greco, 2010). Thus, in collective sports, the cognitive component focuses on the processes of response selection and thus, through cognition, the practitioner performs the reading of the game (Matias & Greco, 2010).

The tactical knowledge facilitates the selection and codification of relevant signals, and also the decision-making, since it leads to reducing the time required for the discrimination of the stimulus (McPherson, 1994, Williams et al., 2003). According to Greco (2006a) identifies two types of tactical knowledge: 1) the declarative tactical knowledge and; 2) the tactical knowledge of procedure. For these authors, the declarative tactical knowledge refers to the ability of the practitioner to know what to do, namely to achieve declare verbally and/or writing the best decision to be made and why of it. As for the tactical knowledge of procedure, refers to how, and the practitioner's ability to operationalize the action, being closely related to motor action.

In collective sports, experiencet athletes have more procedural and declarative tactical knowledge than a practitioners with less experience, being more structured and organized enabling possible making faster and accurate decisions, verifying a positive correlation between knowledge and performance (McPherson, 1994; Greco, 1995, Costa et al. 2002; Matias et al. 2004; Matias, et al. 2005; Greco, 2006b). Experts soccer players, the levels of declarative and procedural knowledge have a greater proximity while in the lower-level practitioners, one note is a discrepancy between the two previous knowledges to performance (Matias & Greco, 2010).

Given the above, there are differences between experienced and inexperienced soccer players about the tactical action, highlighting among other things, greater declarative and procedural knowledge, an organized and structured

knowledge, greater objectivity in the processes of visual search, a better selection of relevant cues, a greater capacity for tactical self-regulation or, a greater ability to plan actions in advance (Williams, 2000; Mann, et al., 2007).

However, so that the training exercise is directed at meeting the needs, trying to increase the perceptual skills of the players and their coupling between pairs, reflecting on the interplay of the team tactic, should be based on the model set by the coach during when the season starts. In fact it should be the game model to influence the training and not the reverse.

Retain that the game model is, in essence, a complex of individual and collective references, which are the principles of game designed by the coach. The principles of the game are the references to action, or behavioral references that lead the players to play as a team. They are the ones who promote the emergence of a regular collective coordination. It is they who give the team organization (Oliveira, Amieiro, Resende & Barreto, 2006).

Mourinho (cit in Oliveira, et al., 2006) regarding the importance of tactical work of teams advance to the EURO © 2004, due to the fact that they work too long the conditional capabilities by means of descontextualized game, reducing the time work in context, comments:

I believe that, following almost cyclic laments by the difficulty of, throughout the season, having to work together players from different clubs, and even clubs from different countries, it is logical that these preparatory weeks impinge on the tactical organization, thinking collectively , designing, automating, bringing the collective performance. In short, making the whole were to become greater than the sum of its parts. Or, more explicitly, so that large groups of players think and react simultaneously on every variant of the game as a team.

Note that any technical or physical action, is always an underlying tactics intention. And if you have a specific intention underlying tactics, we can easily see that every idea of the game in a unique way each order size, and therefore the supradimensional tactic - seen as a given culture of game you want to implement - has to be a great coordinator of the entire training process (Oliveira et al., 2006). Mourinho (cit in Oliveira, et al., 2006) emphasizes this idea stating:

We started this season and from day one [...] worked tactically. From the first day [...] began to clearly define the type of game [...].

Rui Faria (José Mourinho assistant coach) (cit in Oliveira, et al., 2006) adds:

What happens is that the ultimate objective is to play. And if that is the goal, coaching can only mean one thing: make it play. If the aim is to improve the quality of play and organization, these parameters can only be realized through training situations or training exercises where they can work this organization.

In fact, remains some repudiation of this tactical perspective, because the work of the conditional capabilities are not perceived without an understanding of the specificity. Therefore, this training methodology, does not serve from work of other capabilities such as conditional methodologies. At the tactical periodization, work capacity is made conditional on specific character in tactical training exercises that requests specifically the conditional ability desired. This work

requires a superior coach and technical staff. In fact, designing tactical exercises that emulate specific situations of the game and that simultaneously produce desired effects in the predicted conditional capabilities is a very complex exercise that requires a great cognitive investment and a insight into the true model of the desired game. On that Mourinho (cit in by Oliveira, et al., 2006) is instructive:

By working strand under near-tactic that we want for the competition, in other words, close to what we want in our game, we are developing the physical aspect in specificity that it actually has. For example, instead of expanding the 'strength' of an isolated or descontextualized form, before we do so through exercises with certain characteristics, playing with space, time, number of players and the rules that we put them. So we are certainly also to develop something akin to 'force', but in a context much more specific. A tactical-technical exercise in which there are many jumps at the same time, many falls, many braking and many changes of direction, is much more important than another one where we work the "power" in isolation or descontextualized. Now the difficult part of all this is to operationalize what we want is to create exercises where you are able to cover all aspects, we never forget our first concern given a boost early game.

The tactical periodization demarcates itself from others in another highly controversial factor. Do not prepare form cycles (commonly referred to as "peak shape"), as in other methodologies. In fact, the competitions are regular and frequent and therefore does not seem relevant in a competition with about 8 months where, in teams of maximum exponent, you can play three times a week, to enhance certain stage of the season to an optimal level so then there is conditional to a backlash from it. The tactical periodization, confines itself to a stable level and ideal way of tactics, contrary to some "rules" set by the principles of training, governed only by microcycles weekly standardized recruiting conditional capabilities equally throughout the competitive season. Mourinho (cit in by Oliveira, et al., 2006) explains:

Soon after the second weekly microcycle of the season, and I'm talking about the period to which conventionally called pre-competitive, microcycles are basically the same until the end of the season. Both in terms of work principles and objectives, and in physical terms. Only the dominant tactical-level technique is that going by making changes in content to enhance, in the light of difficulties experienced in the previous game and what will be next. But speaking of the physical dimension, which is one that is more associated with conventional periodization, the objectives are the same from the second to the last microcycle. The first microcycle is of adaptation, in which I attempt a rehabilitation effort, no more than that. In this first week is not seeking any increase to that level, but simply that they adhere to what is the specificity of the game.

Fundamentally governed by the methodological principle of stabilization. It may be noted that the stabilization of an optimal and stable level is processed through a standard weekly cycle. This pattern is governed by principles of recovery and stimulation of the players' conditional capabilities on due time. All training exercises are conceptualized within the principles of the game, never neglecting the reality of conditional capabilities of the players.

Basically accrued income tactical periodization looking great and this can only be achieved through a work routine and constant, that enhances the interpretation of positive experiences in training and to promote the receipt of the stimulus to play in the perception of a stimulus similar to process faster and subconscious. In fact, the training aims to offer the most competitive experience for the players to more easily recognize, certain game situations, and react in an almost subconscious, thereby decreasing the time for action.

Thus, the training capacity is made conditional on the specificity of soccer practice, manipulating task constraints, such as length, area, intensity, number of players and goals. This result is obtained by specific exercises that promote the abilities conditional on specificity, keeping the main goal of enhancing certain principle/sub-principle of match-related model of team play.

CONCLUSION

With this paper tried to explore new tactical paths at the learning and soccer training. Allowed a set of references that confirm the value of tactical imperative in the development of collective sports games, particularly in soccer.

It was shown that this approach has space, both in teaching and learning sports, as in high levels of sports performance. The interpretation and performance tasks are more complex because there are no exact results or defined pathways.

The whole process is unique and unrepeatable, upon the model set and match the needs of the team. Only from this fact will be able to envision the workout, trying to improve individual skills of players through collective training, with the main objective, not the maximization of each player, but the maximization of the team as a whole. Therefore the training exercises must be complex, emulating sub-phases of play, so that in the game, the team can react more quickly to stimuli perceived. What you're looking at the bottom, is to increase the competitive ability as a team, through increased perception of each player face the reality of the game. In short, if the goal is the best game of the team, possibly a good way to do this is by training the game and its context reality.

REFERENCES

Araújo, D., Davids, K., & Serpa, S. (2005). An ecological approach to expertise effects in decision-making in a simulated sailing regatta. *Psychology of Sport and Exercise*, 6, 671-692.

Bayer, C. (1986). *La ensenanza de los juegos desportivos colectivos*. Espanha: Hispano Europea.

Bunker, D., & Thorpe, R. (1982). A model for the teaching of games in secondary schools. *Bulletin of Physical Education*, 18(1), 5-8.

Bunker, D., & Thorpe, R (1986). From theory to practice. In R. Thorpe, D. Bunker & L. Almond (Eds.), *Rethinking Games Teaching* (pp. 11-16). Loughborough: University of Technology.

Costa, J.C., Garganta, J., Fonseca, A., & Botelho, M. (2002). Inteligência e conhecimento específico em jovens futebolistas de diferentes níveis competitivos. *Revista Portuguesa de Ciências do Desporto*, 2(4): 7-20.

Davids, K., Button, C., & Bennett, S. (2008). *Dynamics of Skill Acquisition: A Constraints-Led Approach*. Champaign: Human Kinetics.

Garganta, J. (1997). *Modelação táctica do jogo de Futebol. Estudo da organização da fase ofensiva em equipas de alto rendimento*. Tese de doutoramento, FCDEF-UP, Porto, Portugal.

Garganta, J. (2001). Conocimiento y acción en el fútbol. Tender un puente entre la táctica y la técnica. *Revista de Entrenamiento Deportivo*, XV(1), 15-23.

Garganta, J. (2002). Competências no ensino e treino de jovens futebolistas. *Revista Digital EFDeportes*, 45.

Garganta, J. (2006). (Re) Fundar os conceitos de estratégia e táctica nos jogos desportivos colectivos, para promover uma eficácia superior. *Revista Brasileira Educação Física e Esporte*, 20(5), 201-103.

Godinho, M., Mendes, R., Melo, F., & Barreiros, J. (1999). *Controlo Motor e Aprendizagem. Fundamentos e Aplicações*. Cruz Quebrada: Edições FMH.

Graça, A., & Mesquita, I. (2007). A investigação sobre os modelos de ensino dos jogos desportivos. *Revista Portuguesa de Ciências do Desporto*, 7(3), 401-421.

Greco, P.J. (1995). *O ensino do comportamento tático nos jogos esportivos colectivos: aplicação no handebol*. Tese de doutoramento não-publicada, Faculdade de Educação de Campinas, Campinas, Brasil.

Greco, P.J. (2006a). Conhecimento tático-técnico: eixo pendular da ação tática (criativa) nos jogos esportivos coletivos. *Revista Brasileira de Educação Física e Esporte*, 20(5), 210-212.

Greco, P.J. (2006b). Conhecimento tático-técnico: eixo pendular do comportamento e da ação nos esportes coletivos. *Revista Brasileira Psicologia do Esporte e Exercício*, 0 (1), 107-129.

Gréhaigne, J.F., Bouthier, D., & David, B. (1997). Dynamic-system analysis of opponent relationship in collective actions in soccer. *Journal of Sports Sciences*, 15, 137-149.

Griffin, L.L., & Butler, J. (2005). *Teaching games for understanding: theory, research, and practice*. Champaigne, IL: Human Kinetics.

Guilherme Oliveira, J. (1991). *Especificidade, o "pós-futebol" do "pré-futebol". Um factor condicionante do alto rendimento desportivo*. Dissertação de licenciatura, FCDEF-UP, Porto, Portugal.

Hopper, T., & Bell, R. (2001). Games classification system: Teaching strategic understanding and tactical awareness. *The California Association for Health, Physical Education, Recreation and Dance*, 66(4), 14-19.

Laursen, P. (1996). A Case-Study of Games for Understanding in PETE. In *AIESEP International Seminar*. Lisboa.

Lourenço, L., & Ilharco, F. (2007). *Liderança. As Lições de Mourinho*. Booknomics.

Mann, D.Y., Williams, A., Ward, P., & Janelle, C.M. (2007). Perceptual-cognitive expertise in sport: A meta-analysis. *Journal of Sport Exercise Psychology*, 29(4), 457-478.

Matias, C.J., Costa, H., Lima, C.O., Greco, F.L., & Greco, P.J. (2005). Conhecimento tático declarativo: uma análise no campeonato brasileiro de seleções brasileiras masculinas juvenis de voleibol. *Revista Mineira de Educaçã o Fí sica*, 2, 1-10.

Matias, C.J., Giacomini, S.D., & Greco, P.J. (2004). Conhecimento tático no voleibol: fator determinante ou não para se estar na seleção brasileira de voleibol. *Revista Portuguesa de Ciê ncias do Desport*o, 4(2), 490-490.

Matias, C.J. & Greco, P.J. (2010). Cognição & acção nos jogos esportivos colectivos. *Ciê ncias & Cogniçã o*, 15(1), 252-271.

McPherson, S.L. (1994). The development of sport expertise. *Quest*, 46(2), 223-240.

Metzler, M.W. (2005). Implications of models-based instruction for research on teaching: a focus on Teaching Games for Understanding. In L.L. Griffin & J. Butler (Eds.) *Teaching Games for Understanding: theory, research, and practice* (pp. 183-197). Champaign: Human Kinetics.

Mitchell, S.A., & Oslin, J.L. (1998). An investigation of tactical transfer in net games. *Physical Education &amp: Sport Pedagogy*, 4, 162,172.

Oslin, J.L., Mitchell, S., & Griffin, L. (1998). The Game Performance Assessment Instrument (GPAI): Development and preliminary validation. *Journal of Teaching in Physical Education*, 17, 231-243.

Silva, M. (2008). *O desenvolvimento do jogar, segundo a Periodizaçã o Tá ctica*. Pontevedra: MCsports.

Tani, G. (2005). Processo adaptativo: uma concepção de aprendizagem motora além da estabilização. In G. Tani (Eds.), *Comportamento Motor. Aprendizagem e desenvolvimento* (pp.60-70). Rio de Janeiro: Editora Guanabara Koogan S.A.

Thorpe, R. (1990). New directions in games teaching. In N. Armstrong (Ed.), *New directions in physical education* (pp. 79-100). London: Human Kinetics Books.

Turner, A., & Martinek, T. (1995). Teaching for understanding: A model for improving decision making during game play. *Quest*, 47, 44-63.

Turner, A., & Martinek, T. (1999). An investigation into teaching games for understanding: effects on skill, knowledge, and game play. *Research Quarterly for Exercise and Sport*, 70, 286-296.

Vilar, L., Castelo, J., & Araújo, D. (2010). Pressupostos para a conceptualização do exercício de treino de futebol. Um estudo realizado com treinadores com certificado de nível IV. *Revista Gymnasium*, 1,1(3), 121-142.

Wallhead, T.L., & Deglau, D. (2004). Effect of tactical games approach on student motivation in physical education. In *AAHPERD National Convetion and Exposition*. New Orleans: LA.

Williams, M. (2000). Perceptual skill in team games: research, theory, and practice. *Congrè s International de la Sociè té Franç aise de Psychologie du Sport*, 1(1), 1-2.

Williams, M., Ward, P. & Chapman, C. (2003). Training perceptual skill in field hockey: Is there transfer from the laboratory to the field? *Research Quarterly for Exercise and Sport*, 74(11), 98-103.