HYPOTHETICAL STRUCTURE OF INTERACTION OF FACTORS THAT DETERMINE SITUATION-RELATED EFFICACY AND ACTUAL PLAYER AND TEAM QUALITY

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Review paper

Abstract

We hereby suggest a hypothetical structure of interaction of factors with different mutual connections and relations that determine situational efficacy and actual player and team quality. The model is based on arguments provided by scientific research and expert knowledge and experience based on exteriorly depictive factors with direct and/or implicit influence on players' situational efficacy. On the other hand, there are some factors mentioned that reciprocally influence player and game actual quality (sports form level, game organisation level, training process and coach's leadership behaviour, integral player and whole team preparation). In fact, the most significant features of sports games are incorporated in very complex functional and interactional relations, and so the analysis of individual variables cannot provide with a complete insight on the structure and the dynamics of team sports. Here presented are complex interconnections and dynamic interactions amongst the factors that determine situational efficacy which is the indicator of actual game and player quality. It is assumed that the assessment of consistency or variability of situational athlete efficacy based on a sequence of games, as well as the assessment of potential and overall actual player quality is not just the basis for player selection and team formation, sports preparation planning and programming and game management, but also a precondition for determining the course of development of individual players and teams in the sports preparation system. That is a valuable source of information that helps experts to construct, supervise, correct and conduct sports preparation, and to organise and carry out individual, group or team training. In fact, the research on situational player and team efficacy as a whole, based on statistic records where only final offence and defence actions are registered, is not precise enough because it does not encompass contents and/or events in the game that proceed successful and unsuccessful final actions of the players nor the teams. It is therefore necessary to set up a system that links the subjective and the objective assessment of player and whole team quality.

Keywords: *hypothetical structure, assessment, situation-related efficacy, athlete, team sports games*

Introduction

The traditional way of evaluating the athlete's performance (individual and team) is to monitor and note the indicators of situation efficacy, but this only shows partial game efficacy (Trninić 1995; 1996; 2006; Dežman, 1996; Erčulj, 1998; Trninić, Dizdar & Dežman, 2000; Jeličić, 2006). Also, determining differences in situational efficacy between winning and defeated teams can indicate the predicting variables in particular sports games (Lukšić, 2001; Trninić, Dizdar & Lukšić, 2002a; 2002b; Sampaio, Janeira, 2003; Lidor, Arnon, 1997; Trninić, Milanović & Dizdar, 1997; Gomez et al, 2008). This probably arises from the fact that numerous variables (physical, psychological, and technical-tactical) influence individual and team performance in a particular sports game. So tracking and noting the indicators of situation-related efficacy enables the expert coaches to do selective corrections of technical-tactical errors in the process of the situational training. It is thus important to point out that the situation-related efficacy may be observed as an indicator of player and game actual quality, which is determined by: individual and team sports form level, team cooperation, and integral player and team preparation. On the other hand, situation-related efficacy is not just a function of the situation and of the player's actual quality, but also of the tactics of the opposing teams, the judges' decisions, the audience influences, of the functional relationships within the team (cooperation quality), the level of faith in the game system, and of the invested effort in the game of both teams (Trninić, 1995; 1996; 2006). Team sports, from expert coaches' and players', as well as practising scientists' point of view, can be seen as dynamic systems that can be presented as an ordered sequence of tasks every player should perform considering the role and position within a certain game tactics model (Trninić, 1995). Accordingly, all motoric activity and behaviour in team sports games come down to performing tasks, that is, to aim-directed game role fulfilling. Furthermore, team sports have specific structural and functional characteristics that separate them from other sports and are based on cooperation and opposition (Hernandez, 1987; Trninić, Papić & Dimec, 2008; Trninić et al, 2008a; Trninić, Trninić & Papić, 2009). The process requires a cognitive game component, and is treated as a product of interaction where the co-players cooperate performing different tasks in the game. The rivals oppose the cooperation in attempt to out-play the opposition with their gained knowledge (Trninić, Kardum & Mlačić, 2010). Accordingly, team sports games can be observed in layers.

In top-level sports these layers, depending on the position of the observer, can be seen from the perspective of the players, of the expert coaches, of the managers and of the scientists (Trninić, Jelaska & Papić, 2009a; 2009b). We might say that team sports games are complex motoric activities where in every moment practical and conceptual knowledge of a single player and the whole team are being tested (Ferrari et al, 1991; Grehaigne and Godbout, 1995). Furthermore, team sports ball games can be observed as a characteristic series of states. Hence the course of the play can be more precisely described by determining and monitoring different states of the game (Trninić, Perica & Pavičić, 1994). The basic method of monitoring the course of the game is defined as a temporaly ordered image sequence (Pavičić, 1991), and the game state in a particular moment t is a set of all information on ball position, all ten players' positions, as well as on ball movement and player movement speed (Pavičić 1991; Trninić, Perica & Pavičić, 1994). The game state assessment system encompasses a set of variables that covers the initial states, the mean states and the end states of the positional and transitional offence, and the states of efficient and inefficient outcome.

It is thus possible to depict a greater number of characteristic states (Trninić, Perica & Pavičić, 1994). Additionally, the functional approach to team sports game analysis enables decomposement of systems of interaction and interdependence of the parameters within the structure of motoric activity, as well as functional analysis of relations and connections of tactical intentions in offence and defence (Hernandez, 1987). This enables the possibility of mathematical analysing and formalising of complex interactions within the system of team sports games, and the possibility of analysing situation-related efficacy and actual player quality (Trninić, Perica & Dizdar, 1999). Accordingly, a match of team sports games can be observed as an ordered series of tasks in the game,that manifests in the situation-related efficacy of the player and of the whole team (Trninić, 1995; 1996; 2000; 2006). By identifying and monitoring different game states it is possible to explain more precisely the course of the game and the game errands. All practical experiences acquired through observation and training of the team sports games, managing matches and analysing the game course, as well as the theory work on the topic of team sports indicate their indivisibility. However, from the point of view of the expert coaches and the practising scientists, it is necessary to assess situation-related efficacy and actual player and team quality in a particular sports game. The roots of the problems of objective assessment of task performing in the game undoubtedly come from the polyfactorial nature of team sports games, where the reactions of the players in particular phases of the game course are caused by the ever-changing structure of in-game situations, on one hand, and by abilities, characteristics and the knowledge and skill web of the player on the other (Trninić, 1995).

It is also important to point out that the cause and effect relations between the changes in game, technique and tactics regulations directly reflect on acquired parameters of situation-related efficacy (Hernandez, 1987; Trninić, 1995). Therefore it is necessary to keep a constant eye on the changes in the game regulations and all they might affect from the aspect of new additions to the technical-tactical activities in the game, and it is required to analyse all new demands on the actual player quality in a particular position in a basketball game (Trninić, 2006). Probably, the supposition that the best player is the one who achieves maximal individual and team performance while interacting with team-mates, shows that in top-level team sports it is not only important, in top-level team sports, how much an individual player can, but also how much he/she helps in the game systems (Nikolić, 1993).

Therefore, in sports preparation process, expert coaches always try to encourage a balanced development of individual and team play of a particular player (Trninić, 1995; 1996; 2000; 2006). The variables of the situation-related efficacy are intertwined (implicitly and explicitly) and connected to each other, so their studying should not be focused solely on the parameters, but also on their relations. From the functional explanation of the sports preparation system, the most important issue is understanding how these parameters of sports situation efficacy affect performance and sports achievement in interaction (Hernandez, 1987; Trninić, 1995). The basic aim of integral sports preparation in team sports is reaching consistent situation efficacy of every player type in the competition. Researching efficacy stability in competitive sports situations of high pressure on the basis of intrapersonal state and interpersonal dynamics in the team is the framework of studying the dynamics of how athletes and whole teams in team sports function (Trninić, 1995; Trninić, Papić, Dimec, 2008; Trninić, Papić & Trninić, 2009).Therefore, the coach must be thoroughly acquainted with numerous factors that are interlinked to determine situation-related efficacy of an athlete and/or the whole team (Trninić, 2006). Therefore, the concept of situation efficacy of athletes and teams is extensive and hard to define in a way that would stand the test of time in both the profession and sports science.

Structural characteristics of team ball games

Team ball games (e.g. handball, football, basketball, water-polo, and hockey) have specific structural and functional characteristics that differentiate them from other team sports, although they belong to the same tree of sports games that are based on cooperation and confrontation. It is thus important to note that team sports games are built from technical-tactical elements and an organised system of individual and collective assignments performed by players within their position and role in the game (Trninić, 1995; 1996; 2006; Trninić, Papić & Dimec, 2008; Trninić, Trninić & Papić, 2009). Trninić, Perica & Pavičić (1994),

McGarry et al. (2002), and Lebed (2006) state that the structure of mentioned team sports games can be observed through dynamic self-organised systems, and here we can notice that the mentioned sports games constitute of four phases of the game course (Figure 1).

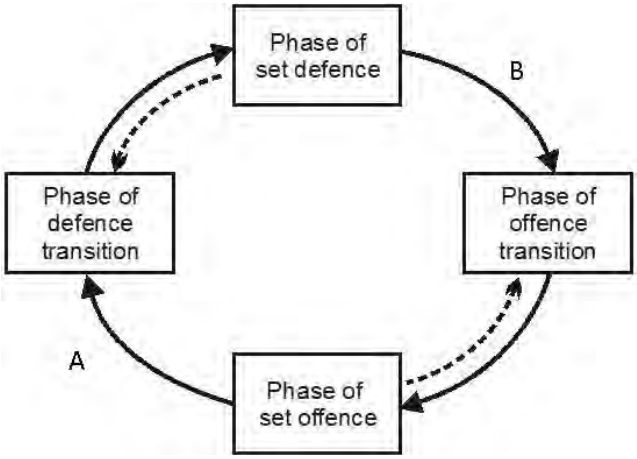

Figure 1. diagram of the phases of the game course

A = Conversion offence/defence – moment of loosing ball possession,
B = Conversion offence/defence – moment of gaining ball possession

The criteria for determining phases of the game course are set from the aspects of ball possession and travel distance of the system's barycentre in a vertical direction (Trninić, Perica & Pavičić, 1994). Furthermore, the situational indicators of in-game efficacy are functionally inseparably intertwined. Therefore certain facts cannot be validly explained if taken into account are only the indicators of situational efficacy, and not the interaction in the course of a particular sports game. It is necessary in the interpretations of the indicators of situational efficacy to also encompass the strategy and the tactics of the game of own or opposing team (Table 1). One should always keep in mind the indivisibility of the sports game – the offence already begins in the phase of defence, and defence in the phase of offence (Nikolić, 1993; Trninić, Perica & Pavičić, 1994; Winter, 1997).

Therefore it is necessary to interactively observe the contribution of particular variables of player efficacy in offence and defence. All mentioned variables participate in the complex interaction and every one of them contributes more or less extensively on different levels of the competition. For example, on different levels of the competition different parameters differentiate successful and the unsuccessful teams. So the understanding of differences and relations between the variables and the situation-related efficacy in team sports is crucial from the aspect of rational management of the sports preparation. Besides, an important issue in team sports is the nature of the interaction of internal and external factors, and how and why they affect each other (Trninić, Jelaska & Papić, 2009a; 2009b).

Variables of situation-related efficacy in team sports

The basis for the research of partial and total efficacy in the game was introduced by a group of explorers who encompassed an investigation of situational effectiveness parameters in particular sports games (Elbell, Allen, 1941; Betram, Rao, 1974; Pavičić, 1991; Swalgin, 1993; 1994; 1998; Trninić, 1996; Erčulj, 1998; Trninić, Perica & Dizdar, 1999; Rogulj, 2000; Trninić, Dizdar, 2000; Trninić, Dizdar & Dežman, 2000; Dežman, Trninić & Dizdar, 2001; Trninić, Dizdar & Dežman, 2002; Hughes, Bartlett, 2002; Rogulj, Srhoj & Srhoj, 2004; Ibanez et al, 2008; Hraste, Dizdar & Trninić, 2008; 2010). Thus we assume that in team sports and based on subjective and objective assessment of indicators of situational efficacy, we can recognise specific characteristics of an individual type of player, as well as the features of the game models of efficient and inefficient teams (Trninić, 1995; 1996; 2000; 2006). Therefore the data on particular team efficacy are relative because they depend on a concrete opponent, on the game tactics model, what makes the core of the problem of analysing situation-related efficacy of the teams in the game (Grehaigne, Godbout, 1995; Grehaigne, Godbout & Bouthier, 1997). The research on player and team efficacy conducted through a statistical record basically note only the final actions in offence and deffence (standard indicators), meaning they do not take into account the contents or events in the game that affect the successful or unsuccessful player and team actions as a whole (Trninić, 1996; 2006). **Overall game efficacy** encompasses all of the relevant factors of actual player quality in a game or a certain competition that are assessed by experts using a certain criteria system (Trninić, Perica & Dizdar, 1999). Thus the indicators of situational efficacy show only partial player and team efficacy and are as such inadequate for explaining the complex dynamic systems like team sports games, where there is a functional interdependence between the indicators of situational efficacy (Dizdar, 2002; Trninić, Jelaska & Papić, 2009a; 2009b). In this context we can differentiate partial and overall efficacy. **Partial efficacy** encompasses only those factors that are recorded as statistical records of final players' actions during the game (indicators of situational efficacy), also known as player efficacy or situational player efficacy (Jošt, Dežman & Pustovrh, 1992; Swalgin, 1998; Erčulj, 1998; Dizdar, Trninić & Milanović, 1997; Trninić, Dizdar & Jaklinović-Fressl, 1999). Furthermore, the indicators of player or situation-related efficacy are interlinked, so that the changes in one factor affect changes in others, and in that manner they indirectly also affect the efficacy of player and the team. The research has fortified the hypothesis that each position and role in the game demand special gen potential and actual quality in the game within the game tactics model (Dežman, 1988; Trninić, 2000; 2006). So, for example, based on the results acquired by the research, we can hereby construct a model of an expert system for assessing and

analysing the structure of actual basketball player quality (in-game efficacy), that can also be useful for more effective directing of players to particular positions or roles in the game (Table 1). Tree structure (dendrogram) is presented on the left side of Table 1. Final game actions are written in capital letters, and the assemblies of final actions, that is, the knots are in small letters. The highest knot represents the assessment of player's competition efficacy.

In the second column we put ponders (relevance coefficients). In column three, we presented the relationship between the results of a particular final action and basketball efficacy (RE). It can be increasing – I, decreasing – D (linear), or combined – C (nonlinear). The mentioned relations are complex, functional and interactional, and constitute the most important features of ball sports games, and have specific practical and applied aspects (Trninić, 2006).

Table 1 – example of a decision-making model for assessing player efficacy in a basketball (adapt. Trninić & Dizdar, 2000)

			P1	P2	P3	P4	P5		Player type
ACTUAL QUALITY			100	100	100	100	100	RE	Assessment of overall actual game quality by in-game
	DEFENCE		50	50	50	50	50		Assessment of defence play quality
		DPL	13,5	11,7	10	8,0	7,5	R↑	Defence pressure level
		HD	8,7	9,0	8,3	9,0	9,3	R↑	Help in defence
		SB	3,4	4,1	4,6	5,9	7,7	R↑	Shot blocking
		ST	9,9	9,1	7,7	5,7	5,4	R↑	Steals
		DRE	5,2	6,5	9,7	13,6	14,0	R↑	Defence rebound efficacy
		TDE	9,5	9,3	9,6	7,8	6,1	R↑	Transition defence efficacy
		MPA							Multiple positioning ability
	OFFENCE		50	50	50	50	50		Assessment of offence play quality
		BP	6,5	3,5	3,0	2,7	3,0	R↑	Ball control
		PS	6,9	4,0	3,7	3,4	3,4	R↑	Passing skill
		BB	5,9	6,0	5,5	4,9	5,5	R↑	Drive
		OLS	6,1	7,1	6,5	4,1	2,4	R↑	Outside shot
		ILS	3,3	3,9	4,9	6,4	6,8	R↑	Inside shot
		FT	3,9	4,9	4,1	5,0	5,4	R↑	Free throws
		EFR	4,0	4,6	4,6	4,7	5,1	R↑	Extorting personal fouls and realisations
		SB	2,3	2,4	3,0	5,1	5,3	R↑	Successful screening
		NBO	3,5	5,4	4,9	3,4	3,6	R↑	Offence without ball
		OJE	1,9	2,4	4,4	6,7	7,0	R↑	Offence rebounding efficacy
		TOE	5,5	5,8	5,2	3,8	2,6	R↑	Transition offence efficacy
		APMP							Ability to play multiple positions

Interaction of factors determining situation-related efficacy of athletes in team sports

It is visible in Figure 2 that in team sports the actual game and player quality is reciprocal to individual and team level of sports form (LSF) and to the level of playing organisation (LPO), coaching manner and coach leadership behaviour (CM), and to the level of integral preparedness of players and team (IPPT). Furthermore, Figure 2 shows that situation-related efficacy (SE) is not merely a function of the situation (S) and the actual player quality (AQP), but also of the strategy and operative tactics of both teams (SOT), of players' adjustability to referee's criteria (PAR), the influence of the public (IP), of the level of belief in team's own system of play (LB), the level of quality of cooperation (LQC), and exerting perpetually maximal effort in game of own's and the rival team (EEO and EER). In order to understand situation-related efficacy, it might be best to take a look at the schematic presentation of the interacting of the determining factors (Figure 2). Evidently the EER has an implicit influence on SE and there is a mutual influence of S and SE. On the other hand, there is a mutual influence between EEO and SE, and an implicit influence of AQP on SE, as well as a mutual influence of IP on SE. It can be seen that there is a mutual influence of LB and SOT together with SE. Finally, there is an implicit influence of PAR on the SE, and a direct influence of LQC on SE, and an implicit one of SE on LQC.

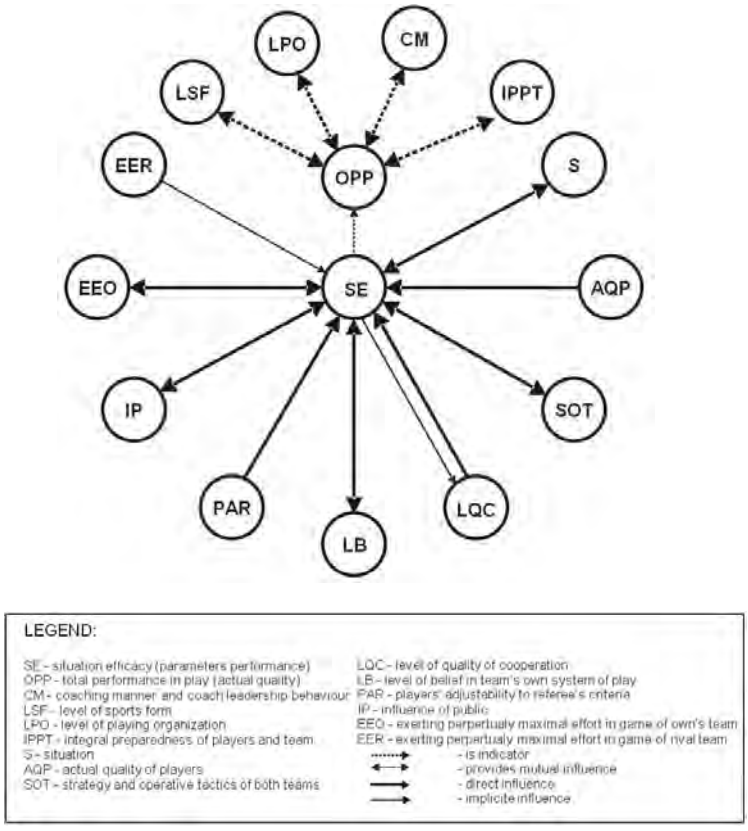

Figure 2. - Factors that determine situation efficacy of athletes in team sports (Trninić, 2006)

Discussion on the applicability of the athlete situation-related efficacy indicators in the process of sports preparation

Knowing the interactions of these factors enables correct planning, programming, implementation, oversight (control), analysing and interpretation of the sports preparation process, and selective adjustments on performance (team's and individual). Managing the sports preparation process, which is the responsibility of the coach and his associates, is a system of procedures that enables changing athlete's specific personality traits and skills based on information gathered on his/her or team's situational efficacy in a sports game (Trninić, 1995; 1996; 2000; 2006). From the point of view of the methodology of integral sports preparation, it is possible to optimally encourage the development of situation efficacy of athletes and whole teams by situation trainings, which are the most important method of the integral sports preparation (Trninić, 1996; 2006). On the other hand, the quality of interaction between the coach and the athletes (e.g. bidirectional communication and mutual respect) and the homogenisation of the team directly determine the situation-related efficacy of the athletes and the whole team (Trninić, 1995). These assignments demand specific technical-tactical knowledge about how to perform something, which enable implementing actions and realising roles in the game. The fundamental rule, which a successful course of organised play is based on, is that every athlete should hold onto his/her responsibilities and functions in the game, i.e., that every athlete should know exactly what his/hers role in the game is (Trninić, Perica & Dizdar, 1999; Trninić, Dizdar & Dežman, 2000). Each individual sports game has its own system of evaluating teams and players. Meaning, not all indicators of situational efficacy are as relevant to a position in a certain sports game, i.e., every position has its own values. This system of evaluation can be based on three scientific concepts, introduced by Swalgin in 1994, that relate to the evaluation system in basketball, but can be applied to other ball team sports.

The first concept necessarily encompasses the mutual set of indicators for situational efficacy in a particular sports game. **The second concept** should precisely determine the standards of situational efficacy in a particular sports game. When speaking of the structural and functional approach to analysing a particular sports game and the specialisation of players in regard to their positions in the game, the norms for evaluating effectiveness of a particular player must be specifically determined. Assessment of situation-related efficacy in a particular sports game is done based on comparing the effects of single players according to the norms set for a certain position. **The third concept** should enable correctness of assessment of particular players. In order for a player's efficacy to be objectively evaluated, one must take into account his position and the relation between the periods of time spent in the game and of the situation-related efficacy of that player. Thus the characteristics of every player are assessed according to the number of minutes in game (increases the reliability of the evaluation). During situational trainings and matches, the third approach enables the coaches, the players, the managers and the sports journalists to make objective and precise evaluation. Besides, such an evaluation system shows the positive and the negative sides of each player in relation to the position and the role in the game. Such a source of information directly affects athlete's attitudes and interests, as well as motivation for in-game corrections. These selective adjustments are included in regular and additional individual, group and/or team trainings. So from the aspect of training organisation, it is most important to respect the balance between the intensity of loads and selective adjustments of technical-tactical errors (Trninić, 2006). In contemporary team sports, the structure of parameters of the competitive activity is the basis for making comparative analyses of athletes who play the same positions. Therefore it is necessary to precisely form the profile of individual structure of the indicators of situational efficacy for each athlete. Also, in order to understand the course of the sports game, it is necessary to know how to evaluate the indicators of sports efficacy during training or during the match. Game statistics, computerised depiction, scout's report, and visual record where the whole court is visible, i.e., the course of all events and states in the game, are the means of successful familiarising with opponing players, and with possibilities of own team. Based on this precise data, integral preparation of the players and the whole team can be optimally programmed (Trninić, Papić, Trninić & Vukičević, 2008a). It is important to point out to expert coaches and practising scientists, that with successful coaches around 90% of strategy and game tactics comes from the mentioned four sources of information. It is important to note that, during the game, the strategy and the game tactics can always be adjusted to the events on the field/court (Trninić, 2006). Hence, the meaningful decision-making based on acquired data on situation-related efficacy, which is an indicator of game and player quality, depends on the knowledge and the opinion of an expert, who is an irreplaceable and most important instrument in forming the process of integral sports preparation (Trninić & Dizdar, 2001). However, when talking about team sports, it is vital to note that neither the highest quality of individual players, nor the lowest variability in their game quality (high level of consistency in situation-related efficacy) are always enough for team success. The reason for this is that sports achievement in team sports is the consequence of group's functional cohesion that directly influences athlete's performance. When analysing efficacy of single players and teams during matches, it must be taken into account that the data on that efficacy are relative because they depend on particular opponents, and on our own and opponent's game tactics model (Trninić, Dizdar & Dežman, 2000; 2002a; 2002b).

Conclusion

The system of sports preparation may be improved by evaluating consistency or variability of a particular player or team on situation-related efficacy in a series of games. Also, it is important to evaluate the current state of preparedness of each athlete, to precisely determine the goals of sports training, to design the developmental programmes of overall actual quality of each player and team. This is especially true for rational design and application of methods aimed at minimizing any weak points and enhancing the strong points of play within the integral sport preparation of the players and teams. Evaluating potential, team and athlete preparadness level and sports form, as well as actual player and team quality is a valuable means for helping experts in constructing, supervising, selective correcting and conducting sports preparation, and also for organising and conducting individual, group or team training excercise. Such an approach in the process of sports preparation enables assessment of efficacy of the technical-tactical, conditional and psychological training programme. Therefore, there are two most important aspects of assessment: evaluation of the state of preparadness and sports form of particular players and teams, and evaluation of total player potential, situation-related efficacy and total actual quality. Assessment of the difference between potential and actual player quality in defence and offence is the main source of information on the possibilities of advancement for a particular player. So without a past evaluation on wheather anticipated players satisfy the most important criteria for a certain position in offence and defence, it is impossible to make an adequate selection of a player for that position. Assessing potential and actual quality of a particular player makes sense if the aquired values are compared to model values of top-level athletes, and then it is visible for how many standard deviations in a part of the game has the athlete improved or fallen behind top-alevel athletes who play the same position in the game. By pondering and adding up these results, we can evaluate potential and/or actual quality of a certain type of player. For this reason, assessing players and teams is essential not only for planning, programming and execution of the sports preparation and athlete selection, but also for rational game management. Furthermore, the system of indicators of situational efficacy should be viewed as a database on individual and team game. Based on that database, one can judge about advancement of every player and the whole team. Hence, knowing your own player efficacy at practice or games is a powerful motivational means for competition of players inside themselves and against rival players on the same positions, but also a source of information for selective corrections of errors in reaction of single players and the whole team. For this reason, in team sports, we should use a methodology of assessment based on the theory of temporal arrays ans on subjective and objective evaluation of player and team quality. With this methodology it is possible to process data on one athlete and/or team, gathered through multiple measurements over certain temporal cycles, and based on which we would be to prognose player actual quality ant total team possibilities. We believe that without predicting the actual player quality and the team game quality in a certain time period there is no successful sports prognostics. Therefore it would be wise to use some techniques like the nonlinear regression models. Such techniques in sports science would provide with some to the coach quite usefull instruments. These are the modern techniques that might process the data collected on the total of changes in rank of particular players in the team, the quality of team's game, improvment of sports preparation and results in the competition in certain points of time.

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HIPOTETSKA STRUKTURA MEĐUDJELOVANJA ČIMBENIKA KOJI ODREĐUJU SITUACIJSKU UČINKOVITOST SPORTAŠA I MOMČADI

Sažetak

U radu je predložena hipotetska struktura međudjelovanja čimbenika s različitim međusobnim povezanostima i odnosima koji određuju situacijsku učinkovitost i stvarnu kvalitetu igrača i cijele momčadi. Model je utemeljen na argumentima koji proizlaze iz znanstvenih istraživanja te iz ekspertnih znanja i iskustva utemeljenih iz izvana opažljivih faktora koji imaju izravan i/ili implicitni utjecaj na situacijsku učinkovitost igrača. S druge strane, navedeni su čimbenici koji recipročno utječu na stvarnu kvalitetu igrača i igre (razina sportske forme, razina organizacije igre, način treniranja i trenerovo rukovodstveno ponašanje, integralna pripremljenost igrača i cijele momčadi). Naime, najznačajnija obilježja sportskih igara su u vrlo složenim funkcionalnim i interakcijskim odnosima te analiza pojedinačnih varijabli ne može dati cjelovit uvid u strukturu i dinamiku timskih sportova. Prikazane su složene međupovezanosti i dinamičke interakcije među čimbenicima koji određuju situacijsku učinkovitost koja je pokazatelj stvarne kvalitete igrača i igre. Pretpostavlja se da procjena konzistentnosti ili varijabilnosti situacijske učinkovitosti sportaša na nizu utakmica kao i procjena potencijala i ukupne stvarne kvalitete igrača nije samo temelj odabiru igrača i sastavljanju momčadi, planiranju i programiranju sportske pripreme i vođenju utakmice, već je i preduvjet da se u sustavu sportske pripreme utvrdi smjer razvoja pojedinih igrača i momčadi. To je vrijedan izvor informacija koji pomaže stručnjacima u izradi, nadzoru, korekcijama i provođenju sportske pripreme te u organizaciji i provedbi individualnog, grupnog ili timskog trenažnog rada. Naime, istraživanja situacijske učinkovitosti igrača i momčadi kao cjeline na temelju statističkog zapisa, gdje se registriraju samo završne akcije u obrani i napadu, nije dovoljno precizno jer ne obuhvaćaju sadržaje i/ili događaje u igri koji prethode uspješnim i neuspješnim završnim akcijama i igrača i momčadi. Stoga je nužno postaviti sustav koji povezuje subjektivnu i objektivnu procjenu kvalitete igrača i cijele momčadi.

Ključne riječi: *hipotetska struktura, procjena, situacijska učinkovitost, sportaš, timski sport*

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