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**SPECIAL FEATURES OF THE SITUATIONAL ANALYSIS OF  
COMPETITIVE ACTIVITY IN PLAYING AND COMBAT SPORTS**

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**Key terms:** situation, analysis, competition, sports

**Annotation.** The purpose of this study is to reveal special features of the situational analysis of competitive activity in playing and combat sports. As a result, such components of the situational analysis were defined as the notation recording, video analysis of motor activity with qualitative evaluation of space and time parameters of movement, observation of accompanying indicators (control of an opponent, intensity of activity, percentage ratio of offensive, defensive and low-intensity actions), key and varying indicators of the situational analysis taking the composition of tactical and technical movements of athletes into account.

**Introduction.** A specific special feature of playing and combat sports is high intensity of motor activity, accompanied by dynamically changing, versatile tempo-rhythm structure of motor actions [1, 8]. The composition of athletes’ activity includes offence, defense, counter-attack and actions in offence, which allow to overtake the initiative in competitive conditions (bout, game). The constant change of the structure of motor actions and their variable intensity in conditions of opponency creates ambiguous conditions, in which the athlete should choose an appropriate move extremely fast.

Taking the extreme manner of competitive activity into account, an adequate perception and analysis of situation to make a correct and timely decision in a short amount of time are of high significance in such sports. Moreover, due to high requirements to technical, tactical and physical training of athletes, the level of their

aggression increased, which has a negative effect on intellectualization of their activity [2, 7].

In this regard, a problematic situation arises, which is caused by an insufficiently formed ability to compare the composition of activities, conditions, situations with the motor structure of variable actions. Inability of athletes to use tactical and technical moves in game conditions and situations of bout leads to the insufficiently qualitative analysis of competitive activity conducted both by a coach and by an athlete.

The purpose of the study is to determine special features of the situational analysis of competitive activity in playing and combat sports taking key and variable characteristics of competitive activity into account.

**Methods and organization.** The study was conducted on the group of athletes of playing sports (basketball) and combat sports (kick-boxing) using the notation recording, registering and analysis of the competitive activity. 120 amateur athletes and professionals participated in the study. Thirty duels of athletes of different ages, such as 624 situations of bouts, as well as 10 basketball games, 3681 in-game situations, were registered and analyzed.

The situational analysis was based on the notation recording (“correspondence analysis”), which was used to record critical events (movement, situations, interactions, technical moves and tactics, including actions of judges). The video analysis of motor activity, related to the quantitative evaluation of time and space parameters of movement of athletes, allowed to determine details of individual competitive situations in comparison with notation analysis.

It should be noted that all mentioned ways of observation are the integral part of the training process (Fig. 1).

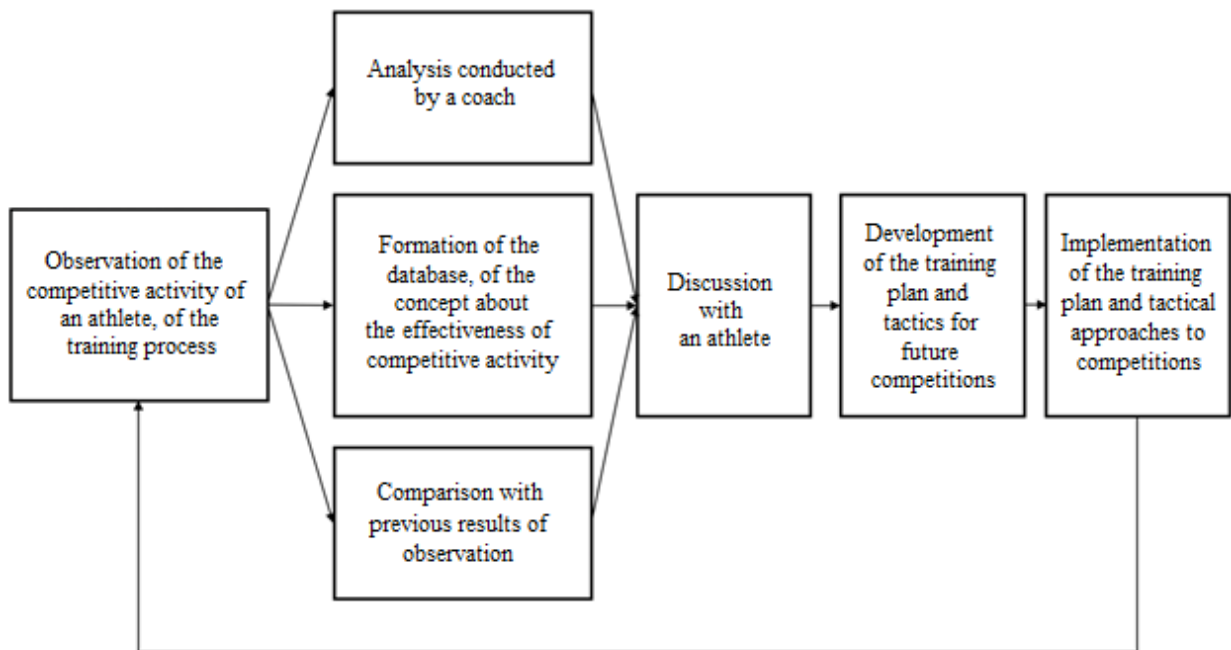


Fig. 1. The process of observations of the competitive activity and the training process of athletes with feedback to make adjustments

During the process of observation of the competitive activity, such indicators were registered as:

- control of an opponent (low, medium, high);
- intensity of activity (high-intensity activity, low-intensity activity, active recovery);
- percentage of offence, defense and low-intensity actions.

**Results and discussion.** Results of the observation of competitive activity of athletes (using the example of bouts of kick-boxers of different qualifications) allowed to determine the ratio of recovery and activity.

The typical kick-boxing bout consists of 3 rounds 2 minutes long with a 1-minute recovery between rounds. In order to defeat an opponent and win the bout, a kick-boxer needs to gather the highest amount of points by using punches and/or kicks or achieving technical knockout during the bout.

Obtained results showed that official and modified amateur bouts are less demanding than official international bouts. However, when comparing of winners and losers, there were no significant differences in the duration of different phases of activity between them. There was no significant difference in the ratio of the bout activity in pause between rounds with 1:4 during the first round and with 1:5 during the second and third round.

It is also important to note that the model of the efficiency coefficient is increasing up to 1:10, when the relation of high intensity to rest is examined. Such differences could be mainly explained by the specificity of level of performance,

depending on technical and tactical requirements, duration of the bout and the athlete's experience.

Percentage of combat actions (offence and defense) and non-combat actions (low-intensity actions) was 40 and 60% on international competitions (Fig. 2).

The presented structure of the ratio of activity and recovery in kick-boxing matches of elite and amateur levels could be used to improve technical, tactical and physical training of kick-boxers, which allows to increase the specificity of performed tasks. This type of scheme called “the action in the state of rest” in kick-boxing requires a well-developed level of aerobic and anaerobic endurance, a distribution of efforts within the tactical setting of a task by a coach.

Similar results, taking specific commonality of situational sports into account, were received during the examination of the competitive activity of basketball players [3].

The key and variable indicators of the composition of competitive activity of athletes of playing and combat sports were revealed, which, in their turn, are the components of the situational analysis.

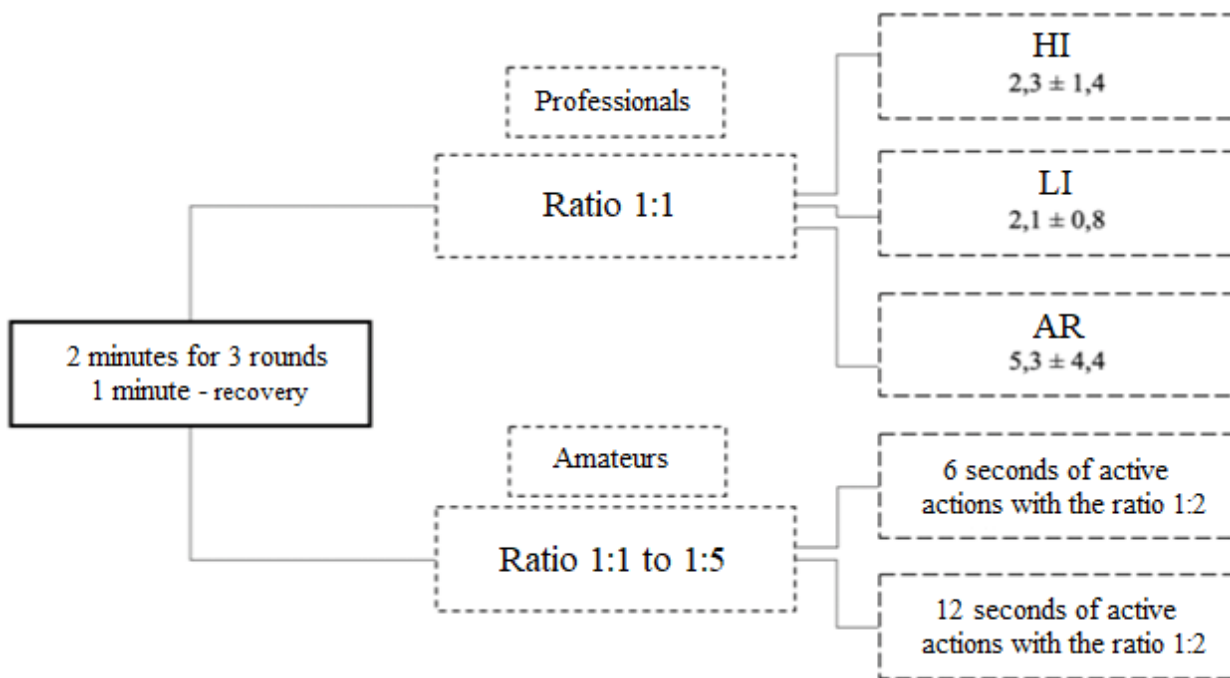


Fig. 2. Structure of the ratio of rest and activity of kick-boxers of different qualifications

Note: HI – high intensity; LI – low intensity; AR – active recovery.

In order to extend the situational analysis in the previous studies, the basic motor characteristics of athletes were defined, taking into account different approaches to the analysis of activity [4]. Then, taking into account the linear and nonlinear classifications of tactics and techniques available in the specialized

literature, as well as the components of the motor actions of kickboxers and basketball players, the data obtained were summarized as follows (Table 1).

The use of presented indicators contributes in a lot of ways to the determination of the composition of minimal situations in competitive activity of athletes and, on its basis, to the further development of exercises and training programs and also of the program of testing of the level of formation of the systematization of minimum competitive situations by athletes.

In the works on the effect of the activity of athletes' actions on the effectiveness of their actions, the issues that allow to reveal the features of opponents' counteractions are insufficiently covered, and the authors' main attention is focused on the conditions for performing moves [5, 6, 9].

Therefore, in order to accompany the situational analysis, we offer generalizing characteristics of athletes' activities based on a subjective assessment through visualization.

The low activity of actions of athletes is characterized by an absence of reaction to the move performance, passive rapprochement with an offender, passive distancing from a defender, slow movement of arms and legs, position of athletes at a distance more than 3 meters from each other.

Table 1

Key and variable indicators of the situational analysis of the competitive activity

Analysis type	Basic characteristics	Key indicators	Variable indicators
Performance analysis	<ul style="list-style-type: none"> <li>- Types of attacks</li> <li>- Counterattacks</li> <li>- Switch to defense</li> <li>- Types of defense</li> </ul>	<ul style="list-style-type: none"> <li>- Classification of moves of the technique of the sport</li> </ul>	<ul style="list-style-type: none"> <li>- The manner of performing moves</li> <li>- Location of an athlete</li> <li>- Activity of actions</li> </ul>
Tactical and technical characteristics	<ul style="list-style-type: none"> <li>- Process of the competition activity</li> </ul>	<ul style="list-style-type: none"> <li>- Counteractions of athletes</li> </ul>	<ul style="list-style-type: none"> <li>- Variability of actions</li> <li>- Distance</li> <li>- Tactical methods</li> <li>- Tactical risks</li> </ul>
Time and space analysis	<ul style="list-style-type: none"> <li>- Details of performing moves</li> </ul>	<ul style="list-style-type: none"> <li>- Frequently used space</li> <li>- Total time of a bout/game</li> </ul>	<ul style="list-style-type: none"> <li>- Trajectories of movement of athletes</li> <li>- Move performance time</li> </ul>
Effectiveness of the activity	<ul style="list-style-type: none"> <li>- Amount of rounds</li> <li>- Amount of periods</li> <li>- Connection between them</li> </ul>	<ul style="list-style-type: none"> <li>- Use of strategy during competitions</li> <li>- Comparison with an opponent</li> </ul>	<ul style="list-style-type: none"> <li>- Positive and negative moments</li> <li>- Passive and active actions of an athlete</li> </ul>

The average activity of athletes is characterized by passive hands movement when performing moves, moving with delay to the operative space, low position, losing balance of the defensive position after numerous stops and jerks, location of athletes at a distance of 1 to 3 meters from each other.

The high activity of athletes is characterized by the preservation of a position after numerous stops and jerks, fast movements with legs, fast movements with arms, simultaneous rapprochement with an opponent, control of space behind the back, location of athletes at a distance to 1 meter from each other.

Thus, in the situational analysis of competitive activity of athletes of playing and combat sports it is suggested to distinguish the following components:

- notational recording (“correspondence analysis”) in order to record critical situations (movements, situations, interactions, technical moves and tactics, including actions of judges) and the video analysis of motor activity with a quantitative evaluation of time and space parameters of movements of athletes, which allows to analyze the process of the observation of competitive activity and training process with feedback in order to make some adjustments;

- observation of such indicators as the control of an opponent (low, high and average), intensity of activity (high intensity of activity, activity of low intensity, active recovery), percentage ratio of offensive, defensive and low-intensity actions, which allows to determine the ratio of activity and rest of athletes.

As a result, these components contribute to the identification of key and variable indicators of the situational analysis based on the content of competitive activity of athletes, which allows us to determine the composition of minimal situations in competitive activity of athletes.

**Conclusion.** Despite the high importance of intellectualizing the activity of athletes of playing and combat sports, a differentiated approach to training, improving and implementing motor actions in competition conditions is currently relevant in such sports. That is the reason why individual integral characteristics of athletes’ activity are not sufficiently taken into account, which make a significant contribution to the qualitative analysis and planning of competitive and training activity.

Results obtained during the analysis of competitive activity indicate the high level of activity of opposing athletes characterized by the increase in the amount of dynamically changing competitive situations and versatility of variable motor actions. At the same time, in the process of training in playing and combat sports, insufficient work with athletes is carried out aimed at analyzing situations, systematizing them using minimal structural components.

In the situational analysis of competitive activity of athletes of playing and combat sports following components are used: notational recording, video analysis with qualitative evaluation of space and time parameters of movements, observation of accompanying indicators (control of an opponent, intensity of activity, percentage

ratio of offensive, defensive and low-intensity actions), identifying key and variable indicators of the composition of competitive activity of athletes.

As a result of the analysis of competitive activity, it is important to note that specific tactical and technical actions require more detailed attention in accordance with the age of athletes and the level of their preparedness. The analysis of competitive activity and tactical and technical actions requires an individual approach for further modeling of tactical and technical actions, improvement of the process of training taking the specificity of types of sports into account.

In the perspective of further study, the obtained results allow to suggest that for training and improvement of tactical and technical actions of athletes of playing and combat sports, it is advisable to focus in the training process on the formation of the ability to systematize the minimum situations of competitive activity by analyzing and comparing them.

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