Analysis of the effectiveness of the counter initiative scheme in Table Tennis athletes

Abstract

In the 2018-2019 national school table tennis competition of 2018-2019, it is observed that, despite the dominance of tactical adaptations, the application of the counter-initiative scheme in the athletes of the province of Havana is still insufficient. Hence, the authors intend to analyze the effectiveness of the counter-initiative scheme of the U-13 Table Tennis team in the province of Havana. To carry out the investigative tasks, we work with a population of three athletes. From the theoretical level methods are used, the analysis-synthesis and inductive deductive and the empirical level, the observation, documentary analysis, the interview and, finally, from the mathematical one, the empirical distribution of frequencies. The causes that give rise to the deficiencies are analyzed, taking into account the technical execution and the effectiveness of the individual tactic. As a result of the study, the insufficient use of the counter initiative to score from the initiative of the opponent with the long shots with effect up from the backhand is evidenced.

Keywords:*schemes, adaptation, counter initiative, effectiveness, individual*

Introduction

Table Tennis is an individual sport, where it is essential to develop skills that allow you to master serves, returns and surprises. In this sport the game systems are defined by their most used schemes, preparing a point with the intention of winning it as quickly as possible.

There are different types of schemes, according to Molodzoff (2008):

> taking initiative (trying to score the point by attacking before your opponent); hard hit (send as many strong balls as possible); placement-speed (long serves or returns, allow a quick play or surprise, thanks to the precision of the combined placement of the speed of the ball); counter-initiative (provoke the adversary to attack in difficult conditions for him and thus be able to counter-attack); cause an error (keep the ball in play by varying its rotation, placement, speed and trajectory until the opponent loses a point) (p. 146).

If it is taken into account that dexterity, ability, speed and coordination, among other qualities such as agility, are important for tabletennis athletes and that the studies carried out show how the highest number of points is achieved in the first three balls (

Molodzoff, 2008), it can be affirmed that players must master the technical arsenal and know the tactical adaptation schemes in addition to specializing by combining those that are identified with their system and style of play. While for the evaluation of the schemes it is necessary to work from the individual offensive tactical system (OTS) of the athlete.

For the authors, the counter initiative scheme implies placing the difficult ball on the opponent from his attack and counterattacking with different techniques such as: spikes, up effects and flip; according to the organization of your individual OTS, combining the different indicators (brushing, pushing, distance, height, speed, positioning, precision, power, among others; all of which allows the effectiveness of actions from training.

From the analysis of the Integral Athlete Preparation Program (IAPP) for Table Tennis (Authors' Collective, 2016-2020) it could be seen that how to evaluate the tactical action taking into account individual OTS is not included. In this aspect, individual specialization is framed from the Under-11 category and up to the sports category of teacher basic technical-tactical ways are evaluated for any level of the development pyramid, by the method of direct observation where it is quantitatively and qualitatively reflected. the technical level.

Various studies expose the importance of game tactics, Malho (1969) states that:

> "The tactical action of the game has three main phases: perception and analysis of the situation, mental solution of the problem and the motor solution of the problem (...) they represent a succession of closely interrelated steps" (p.27).

That is, they are not isolated actions and Malho (1969) points out that tactical actions are the unit of the activity and in essence the solution to the problem. These actions are what an athlete has to perform to solve various problematic situations in competitive exercise with an educational level.

Meanwhile, Molodzoff (2008) points out that tactical action is a strategic adaptation that must be built and adjusted based on the game system, knowledge of the adversary, and game schemes. The author himself proposes different actions against initiatives with attack techniques similar to those included in this research.

When making an assessment of the counter initiative, it is observed that it is very rich in its variety and many of the techniques can be part of it in any return. Molodzoff (2008) reveals the importance of the effectiveness of tactical actions and indicators to evaluate it; meanwhile, the authors of the present research considered taking into account the

criteria of Copello (2015) who argues in relation to the control of the tactical performance of Judo, that the value of tactical action and tactical thinking implicitly carries the components of the integrative preparation and that if it is intended to control all the values of effectiveness, both its qualitative and quantitative side must be taken into account.

On the other hand, Sáez, Ruano and Gutiérrez (2020) consider that the most propitious context for evaluating performance should be the competition itself, a scenario where all the variables that could affect the result converge, obtaining the most real information and guaranteeing better control the state or condition of the athlete.

In the authors' opinion, the effectiveness of tactical actions cannot be measured from technical indicators and from the ways of evaluating technique. The tactical evaluation is one of integration and in it the individual OTS cannot be absent, apart from the preparation stage; This is measured as a process and simulating or in competition, emphasizing strengths, the first three balls, and game patterns. In this regard, Copello (2015) refers that the effectiveness of performance depends on the number of effective actions over the total number of actions performed.

The authors supported themselves in this type of evaluation to determine the effectiveness of tactical actions after observing nine games in the 2018-19 national Table Tennis competition (last held before the COVID-19 pandemic) where it was evidenced the inadequate use of the counter initiative, especially in techniques involved in returns with up effect from and on the backhand, which had a negative impact on the score.

The objective of the investigation was to analyze the effectiveness of the counter-initiative scheme of the U-13 Table Tennis team in the province of Havana.

Meanwhile, according to Turró (2016), you cannot go to the competition without an orderly and intentional preparation, without properly developed and strengthened technical-tactical skills; Therefore, it is necessary to contextualize, systematize, individualize the preparation based on the knowledge and solution of technical-tactical problem situations and evaluate them as such.

Materials and methods

The population worked with in the investigation was comprised of a total of three athletes who are the ones that made up the technical plan of the team. Another population of five coaches with more than five years of experience in Table Tennis to enrich the information.

The theoretical level methods were used, the synthetic analytic for the foundation of the research problem and empirical methods such as documentary analysis, semi-structured interview and structured observation.

The documentary analysis: which included national and international bibliography about the tactical evaluation in other game schemes such as (Romero, 2018) that was used to determine the theoretical underpinnings of the research and what is oriented in terms of counter initiative schemes. In addition, the analysis of documents such as the IAPP and level 1,2 and 3 books of the International Table Tennis Federation (ITTF) as well as official documents of the coach was carried out.

Structured observation: it is used to check the analysis of the effectiveness of the counter initiative. It was necessary to incorporate the predetermined indicators for the evaluation of the technical-tactical actions into the observation guide.

The table and formula expressed in (Copello, 2015) mentioned above were used, where the total of effective actions is divided by the total of actions carried out (% of effectiveness = effective attacks x100 / total of attacks carried out) and as a result it is obtained the effectiveness of the techniques involved per athlete, and in the three athletes.

Table 1. Indicators of the observation guide to evaluate the effectiveness of the counter initiative.

Tactical Action Indicators			**Evaluative scale**			
Counter initiative techniques	**Phases of movement**	**Technical execution**	**VG**	**G**	**R**	**W**
-Effect above (for, from and to the right, center and reverse)	-Preparatory -Turn -Contact -Final path	-Position -Nature of the shots -Impulse				

-Auction (for, from and to the right, center and reverse) -Flip (by, from and to the right, center and reverse).	-Displacement -Acceleration -Power -Speed -Placement -Rotation.	_____ _____ _____ _____ _____

Qualitative evaluation:

• If it meets all the indicators: Very good, (The individual counter initiative tactical action was accurate, did not allow the opponent to organize and won the point)

• If it did not meet an indicator, it is evaluated: Good (The individual counter-initiative tactical action was accurate, did not allow the opponent to organize and won the point)

• If he did not meet two: Regular (The counter initiative action was accurate, but he lost the point)

• If he did not meet three or more: Wrong (The counter initiative action was not precise, and he lost the point)

Quantitative evaluation: VG –100-76, G –75-51, R –50-26, W– 25-0

The statistics adapted by the authors were analyzed and the data were processed (3 actions for each athlete chosen at random in 9 games), supported by the recorded videos of each player. Through the indicators: the first three balls and also for the challenger, placement, displacement, (base of support, impulse, reaction, recovery), the quality of the actions carried out was also reflected; Of these, how many were effective, it should be noted that to determine its effectiveness, the scoring of the point was assessed, if it met precise technical-tactical requirements (quality of technical execution, correspondence with the tactical plan) from the individual OTS.

From the mathematical statistical: the empirical frequency distribution was used in order to carry out all the processing and interpretation of the data obtained in the diagnosis to access a quantitative and qualitative assessment of them.

The semi-structured interview: applied to five coaches in order to verify what they have established or oriented to control the tactical action of the game in Table Tennis.

Results and Discussion

Results of the documentary analysis

• It is reaffirmed that in the IAPP there is insufficient guidance on the control of the tactical action of the game in this sport.

• It was found that there is the individual tactical system of the athletes in the written plan of the teacher's teaching program, in order to know the weaknesses and strengths of the player and his opponent.

• The organization of the techniques involved in the individual tactical plan and the techniques that characterize it (up effect, flip, auction) was known.

• It is important to highlight that each athlete has their own game system, where the components of the preparation of this sport are present, which frame their individualization (Barrero, 2018).

It was also found that 100% of the individual OTS of the athletes did not have an adequate description, which means that what is not trained is required in the competition. From the analysis carried out in the review of the IAPP 2016-20, it could be seen that the evaluation is aimed at simple techniques or tactics in isolation, decontextualizing the game process.

In this sense, with this study it was shown that the individual OTS of the athletes needs an adequate description where the fundamental techniques are implicit, the preferred ones, which can be not only attacks but also control and auxiliary ones, taking into account strengths and weaknesses of both the player and his opponent; This is inferred by the low effectiveness of the techniques that characterize counter initiative scheme in the three athletes evaluated of R and their insufficient correspondence with it and the individual OTS declared in the written plan.

The description of a player's OTS is nothing more than the sum of preferred game schemes, which he uses to score points according to Molodzoff, (2008: 148) and includes, how the technique is executed, the characterization of the indicators that intervene in the game. process (from where it is carried out, by and towards where the ball is directed, place of contact with the ball, type of effect, combination, placement, system near the table, away from the table and defense).

In observation

It could be seen that # 1 player made a straight attack, so that the opponent did not anticipate. Of a total of 71 actions carried out, 33 were effective, representing 40%, of which only 52% were overhead, 40% were shots and 48% were flip. Among the errors is the inadequate positioning and speed in his turns and movements when counterattacking with effect up from the backhand and to the right from the left side; Therefore, it reached a total evaluation of regular (R), (tables 2, 3 and 4). While player #

2 is a rally player, who guarantees the point after the third ball, keeping control of the game.

It was observed in the videos that this athlete has weaknesses in movements, in taking momentum, in the support from the center backhand with the effect above the backhand. It had a total of 78 actions carried out, of which only 33 were effective, representing 42%. 24% were up effect, 50% of spikes and 52% of flip. He obtained an evaluation of regular (R).

Likewise, player # 3 had deficiencies in the right attack directed to the center from the left side, with an effect above the backhand and right. This athlete had a total of 74 actions performed and only 30 of them were effective, which represents 40% effectiveness in their actions. The evaluated indicators show the inadequate positioning when moving and turning when taking the shots. In the above effect he obtained 48% effectiveness, in the auction 41% and in the performance of the flip 35%. From what it obtained as an evaluation, regular (R), it can be seen in tables 2, 3 and 4.

Table 2. Effectiveness of the actions with effect above

	Actions done	**Effective actions**	**%Effectiveness**
Athlete1	23	12	52
Athlete2	25	6	24
Athlete3	23	11	48
Total	71	29	41

Source: self made

Table 3. Effectiveness of the actions with Auction

	Actions done	**Effective actions**	**%Effectiveness**
Athlete1	25	10	40
Athlete2	28	14	50
Athlete3	22	9	41

Total	75	33	44

Source: self made

Table 4. Effectiveness of actions with Flip

	Actions done	**Effective actions**	**%Effectiveness**
Athlete1	23	11	48
Athlete2	25	13	52
Athlete3	29	10	35
Total	77	33	43

Source: self made

According to the observation made in the effect above, athlete # 1 had 52%, being the best in effectiveness, # 2 had 24% effectiveness and athlete # 3 had 48% for a total of 41%, evaluated of regular (R). In the auction, athlete # 1 obtained 40% effectiveness, # 2 obtained 50%, being the best in effectiveness and # 3 reached 41%, for a total of 44% effectiveness, evaluated of R. In the flip athlete # 1 reached 48%, # 2 was the best with 52% and # 3 obtained 35%, for a total of 43% effectiveness, all evaluated of R (table 5).

Table 5. Effectiveness of all actions performed by athletes

	Actions done	**Effective actions**	**%Effectiveness**
Athlete1	71	33	46%
Athlete2	78	33	42%
Athlete3	74	30	40%
Total	223	96	43%

Source: self made

In general, in the behavior of the counter initiative scheme in the three athletes, the technique of the effect above was affected, in the turns and movements where the poor positioning, the extreme flexion of the legs stands out; causing slow thrust and pivot. This implies that at times it was intended to reach the ball with the arm, not only laterally, but when entering and leaving the table. In addition, incorrect support of the metatarsal and the taking of impulse was observed in the posture, which makes balance

and the contraction of the pelvis difficult to rotate the hip; which reduces the speed and effect of the movement.

Two of the athletes, including the left-handed man, when performing the upside-down effect, they accelerated the forearm and wrist on contact, making it difficult to direct and distance the shot, that is, to place the ball, according to Tepper(2003), also sometimes they did not reach the ball in a balanced way

In such a way during the observation, errors were detected that show that the nature of the blows is not taken into account in all its magnitude, the athlete who had the most deficiencies in the technique of effect above was # 2 with a 24% effectiveness. The most effective athlete was player # 1 with 46% effectiveness, rated as Regular(R).

When analyzing the counter initiative scheme, the results show that regardless of the fact that the athletes must train all the technical-tactical elements, of the style and game system, the individual OTS that defines it and in turn this is, cannot be lacking in their preparation. evaluated with the predetermined indicators in the different stages, with various combinations, in real game conditions.

To measure its effectiveness, it was necessary to know how many times the player used it in the game and how he trained it, taking into account his determination. The updating of the same and summation of the correct execution of the techniques that make up the tactical actions, among them those that characterize it; in this case, the counter initiative scheme (the up effect, auction, and flip), as well as the satisfactory performance of these actions (the point), reflected its effectiveness.

In the interview, 60% of the coaches are dissatisfied, because in the 2016-20 IAPP the control of individual tactics is not treated with the depth that Table Tennis needs, with respect to the control of tactical adaptation schemes and their effectiveness. 100% of the coaches express that they do not know the ways to carry out the tactical evaluation and effectiveness of the game schemes, as well as the determination and update of the individual OTS of the athletes.

As the main result of the research, the characterization of the selected athletes was obtained:

Athlete # 1 is left-handed, middle distance. His offensive tactical system is composed of: serve thrown from the backhand, long with combined effect for the opponent's right and to block him straight, dislodge him or seek the attack from the right; forehand serve with long combo effect for the backhand and looking for the strong forehand attack towards the middle of the table. Receiving with a long intention for the opponent's

right, and turn right from the backhand to counter-attack. Its strengths are serve, blocking, rally, forehand attack to balls without effect, among its weaknesses we have: moving, receiving, forehand attack to balls with downward effect and its game schemes are based on placement-speed, strong blow, counter initiative and cause error.

Athlete # 2 is upright, short-range, offensive, rallying. His tactical system is based on: straight backhand short serve with side effect to the opponent's right, and attack from the forehand towards the middle of the table. Serve thrown long, speed to the right and counter-attack straight. I take long to the backhand and turn to attack. In its strengths it is: rally, forehand attack, receipt; Weaknesses: serve, block, move and their game schemes are: taking initiative and strong blow.

Athlete # 3 is a right-hander and a racer who dominates all distances, offensive. His tactical system is made up of: a long forehand serve with an upward effect from his backhand to the opponent's backhand and attacks with a strong blow. Serve thrown without effect, cut to the back, turns and attacks from the right. Long catch to the right and backhand block and move to the opposite side. His strengths are backhand hitting, blocking, rally and weaknesses cutting, serving, forehand attack, displacements. The most widely used game schemes are placement-speed, counter initiative, causing error and strong blow.

As a result of the study, the insufficient use of the counter initiative to score from the initiative of the opponent with the long shots with effect up from the backhand is evidenced. In general, among the three techniques studied, the three athletes achieved a 43% effectiveness evaluated as Regular(R).

Conclusions

The studies carried out showed that to work with the counter initiative scheme, it is necessary to determine, properly use and evaluate the individual offensive tactical system based on the real situations and functions of the game.

The diagnosis showed that the Havana Under-13 Category Table Tennis team presented deficiencies in the counter-initiative game scheme. In the returns with effect above, a 41% of effectiveness was reached, due to the inadequate support of the feet, the taking of momentum and turns; which affects movements and causes difficulties in positioning and precision; enabling the adversary to take the offensive.

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