EXPERIMENT REGARDING THE COACHING JUNIOR PLAYERS UNDER 19 ACTING ON THE LATERAL SIDE OF THE FIELD

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Abstract
Experts are looking for new solutions for a high performance of the players during competitions. The statistics are showing that operation areas leading to a better completion of the actions may be created on the lateral side.
In this context, our experiment has conceived a differential training programme, targeting new methods and means destined to improve the physical and technical training that would finally lead to an increase in the number of actions on the lateral sides of the field.
The implementation of this programme has optimized the efficiency of the players in the experimental group and thus the working hypotheses have been confirmed.
Keywords: *differential training, soccer, lateral side.*

1. INTRODUCTION

Important statistics (www.uefa.com- technical report) regarding the way of scoring goals both in the latest Champions League tournaments (between 16% and 25% from crosses only) and in the latest European Championships 2008;2012 (27% and 33% from crosses only) show the fact that teams have started working more intensely on the actions in the lateral side of the field. The increased attention of the defensive team players, the voluntary crowding of players close to their penalty area and the strict marking in the goal area have recently lead to an increase in the percentage of the actions initiated and developed on the lateral side of the field (Apolzan, 1999, Lambertin, 2000, Radulescu, 2003, Ploesteanu, 2004, Rovida, 2007, Firiteanu, 2008, Vamesu, 2008, Dragan, 2009). Thus, the coaches' and players' way of thinking has evolved, new solutions being necessary to score a goal or to stop the attack, solutions starting from the two lateral sides (Stanculescu, 1999, Comanita, 2006, Radulescu, 2007, Ploesteanu, 2007, Neta, 2008, Vamesu, 2009, Savu, 2011).

Andy Roxburg, the UEFA technical director, stated at the conference in Florence, on 23-26 October 2006, that the factor ensuring the progressive increase or the maintenance of the performance ability is the quality of the training process. Jean Piere Marlans - deputy director of the French National Soccer Centre, Nico Romeyn- coordinator of the coaches' educational programme in Netherlands and Erick Rutemoller- head of the coaches' education department in Germany tackled the importance of children, junior and youngster sections at the same conference, producing important ideas, such as:

- the modern training session for junior players under 19 is similar to the training of the First Team, focused on the junior players' adaptation to the professional concept of senior players.

- the training is conceived as a means of keeping, as much as possible, the content and the form of the game

-the training must target the differential preparation, according to the player's features and to the effort specific to the acting area so as to achieve maximum of efficiency.

2. PROBLEM STATEMENT

The methodological orientation of the players' training derives from the basic and secondary tasks of each player, according to the particular physical, technical and tactical requirements of the various areas, where the players act. Acting in the established areas, in offensive and defensive actions, according to the game concept and to a team-specific tactics, the player must be prepared to move and play on certain lines, identical to the ones used during the game. An individual and individualized training is achieved this way, including all the training factors, facilitating the optimal standardization of the means of training. Their selection and quantification is accessible to the coach, who must practically know the content of the game and of the actions developing offensively and defensively in all areas of the field. The repetition of these actions during the training contributes to the perfecting of the game in pairs, in tandem, in groups of players, in lines and for the whole team.

3. PURPOSE OF STUDY.

The purpose of this study is to confirm the increase in the efficiency of the soccer players acting on the lateral sides, after a differential experimental programme conceived for the soccer players under 19

Hypotheses of study:

1.To what extent the implementation of the differential training programme, specific to the lateral side shall contribute to the increase of the players' physical and technical eficiency and implicitly of the entire team, with favourable consequences in its final results.

2.Whether the means and methods employed influence the increase of the physical and technical preparation level to the soccer players acting on the lateral side.

Aims of the study

To elaborate a training programme for the junior players in order to cultivate lateral side acting specific skills to the soccer players under 19.

To identify the appropriate experimental programme, according to the physical and technical potential of junior players under 19, in order to increase sports performances.

4. METHODS

In order to fulfill the purpose and reach the aims of the study, we have used the following research methods :

a. The Scientific Documentation (bibliographic) including a wide range of information, tackling special studies from the country and abroad, scientifically substantiating the theory and methodology of soccer.

b. The Pedagogical Observation. Observation must be objective, continuous and systematic. The acquired data are recorded, classified, processed and conclusions are drawn. The data collection has been helpful for a preliminary analysis in choosing the appropriate means for the experiment achievement. There have been recorded observations referring to lateral side specific actions in the soccer game of junior players under 19, participating in the National Junior I Championship

c. The Testing and Measuring Method. The measuring and testing were intended to point out the evolution of the proposed experiment. Series of physical and technical tests were designed, summing 3 tasks for each test, starting from the **FRF MODEL.**

Table 1. Player features/Positions

PLAYER'S POSITION ON THE FIELD	PHYSICAL	TECHNICAL	TACTICAL	MENTAL
LEFT/RIGHT DEFENDERS	Speed-endurance (aeroby-anaeroby) Explosivity	Defensive technique Tackling-slide Receiving/pass Ball mastery Cross pass	Positioning and movement science Timing Offensive contribution Offensive versatility	Aggressiveness Will Trust
LEFT/RIGHT MIDFIELDERS	Endurance aeroby-anaeroby Speed	Ball mastery Pass/receving Dribbling Cross pass Shot	Defensive retreat Offensive contribution Pressing Good duel play	Courage/generosity Will Concentration Taking risks

The following were used:

Physical tests:

***1*. Speed on a 30m distance**. *MATERIALS:* Stopwatches, 2 markers, materials for marking 2 lines on the ground.

INSTALLING: The test takes place outdoor on a synthetic track (the surface of the track shall be mentioned). It must have enough space for the player to be able to stop. Flat surface; two lines are marked at a 30m distance one from the other; 2 markers are placed on each side of the finish line.

EXECUTION: On hearing „on your marks", the player stands next to the start line, without touching it. On hearing the whistle he speeds and stops after the finish line.

ASSESSMENT: The timing starts the moment the left foot is lifted and stops the moment the performer's chest is over the finish line. Time is measured at 1/10 of a second.

ATTEMPTS: 2, the best is recorded.

***2*. Speed on a 50m distance**. *MATERIALS:* Stopwatches, 2 markers, materials for marking 2 lines on the ground.

INSTALLING: The test takes place outdoor on a synthetic track (the surface of the track shall be mentioned). It must have enough space for the player to be able to stop. Flat surface; two lines are marked at a 30m distance one from the other; 2 markers are placed on each side of the finish line.

EXECUTION: On hearing „on your marks", the player stands next to the start line, without touching it. On hearing the whistle he speeds and stops after the finish line.

ASSESSMENT: The timing starts the moment the left foot is lifted and stops the moment the performer's chest is over the finish line. Time is measured at 1/10 of a second.

ATTEMPTS: 2, the best is recorded.

4. **Endurance - Running 12 min.** *MATERIALS:* Stopwatch, paper, pencils, file.

INSTALLING: A 300m or 400m circular running track, if possible.
EXECUTION: On hearing „on your marks", the players stand next to the start line, without touching it. On hearing the whistle signal (or any other acoustic signal) they cover for 12 min the longest distance possible.
ASSESSMENT: The stopwatch stops the moment the performer's chest is over the finish line. The run distance is calculated by adding the number of complete tours and the extra section covered.
ATTEMPT: 1
Technical tests:
1. **Ball mastery through markers followed by shot on goal**.

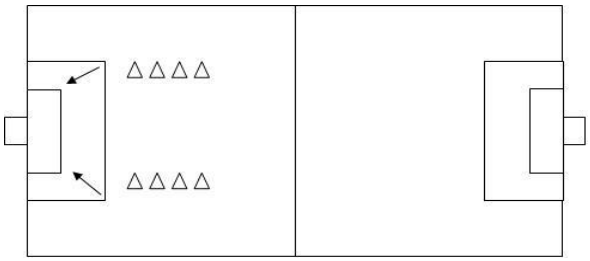

Figure 1. Ball mastery through markers followed by shot on goal with the foot in the marked point

Marking: According to the scheme. 4 markers are placed at 1.5 m from one another. The last marker is placed on the edge of the penalty area. The goal is divided by vertical and horizontal strips.
Execution: The player masters the ball through the 4 markers (according to the acting area) and then shots straight on goal in the indicated area. The player executes 6 shots.
Rules: The ball must enter the goal while in the air (direct air trajectory).
Result**:** The sum of the points.
A SUCCESSFUL SHOT: 10 points → RIGHT, UPPER LEFT; 5 points → RIGHT, LOWER LEFT; 3 points → UPPER CENTER.

2. **Cross passes within a marked area**

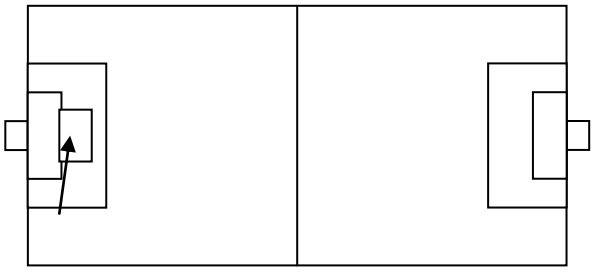

Figure 2. Cross passes within a marked area

Marking: According to the scheme- The 5m square marking must be visible (cones)
Execution: The player must execute 3 cross passes in the 5m square, from a 25m distance (right side or left side, according to the acting area)
Rules:

- The ball is static. The ball falling on the square line = success.
- Successful cross pass = 20 pts.

Result: The sum of the points.
Attempts**:** Two, the best is recorded. The player has the right to a trial attempt.

3. **Header on goal by the players on the lateral sides**

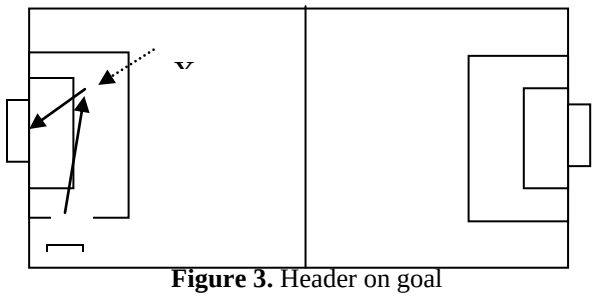

Figure 3. Header on goal

Execution: The player must execute 6 headers in motion, heading a ball passed by a teammate.
Rules:

- The first three headers are executed to score in the lower rectangle, the next three are executed to score in the upper rectangle
- The player must be in motion. A successful attempt = 10 pts.
- The ball may touch the ground once before entering the specific space.
- If the ball touches the strips and enters the correct space = valid recorded attempt. The player has the right to a trial attempt.

Result: No. of successful shots x 10 pts.
Attempts**:** Two, the best is recorded.

d. The Pedagogical Experiment was based on the confirmation of the working hypotheses concerning the training of soccer players under 19 acting on the lateral side.

The groups involved in the research were the following:

- Experimental group: F.C.M.Dunărea Galati –junior players under19 (lateral defenders and lateral midfielders, 8 in number)
- Control group: Otelul Galati – junior players under 19 (lateral defenders and lateral midfielders, 8 in number)

The location of the experiment:

The experimentul took place on „Dunarea 2" field in Galati, where the playing surface is made of artificial turf, so that the teams' training was not influenced by the weather.

Organisation of the research:

This study took place during a return competition (January 2012- May 2012) and it included:
-Organisation and deployment of tests. Periodisation of the research tests:
1- initial testing – during 15-20 January 2012, in order to indentify the initial values of the studied parameters;
2- final testing – during 26- 31 May 2012.

The experimental programme:

The experimental group worked on a weekly schedule, two days per week: Tuesday and Thursday, having a 100min training session. A training programme based on exercises and games specific to lateral sides (where a certain numer of players usually act)was applied. Individual and collective actions were practiced in small formations without opponent, but also game actions under active and passive conditions:1x1, 2x2, 3x3 and they were developed up to11x11, with specific tasks resulting from the game concept. There were also used odd game groups of 2x1, 3x1,3x2, 4x2, 4x3, 5x3, 5x4, where the numerical superiority was in favour of the attack or the defense, requesting players to effectively solve the game tasks.
The control group worked on a training programme faithfully representing the global content of the game, through all its offensive and defensive components.

Types of exercises:

1. *1x1 Game*

a) Inside a square area of 15x8m or 20x8m, trying to surpass the endline. The game is performed on the areas of the field where the players usually act, in opposite positions (rDxlM – right defender x left midfielder; lDxrM – left defender x right midfielder). The players are positioned at opposite edges of the square. The player carrying the ball moves full speed towards the other, trying to reach the endline on the opponent's side by dribbling the ball. The number of actions is counted (5x; 10x;15x).

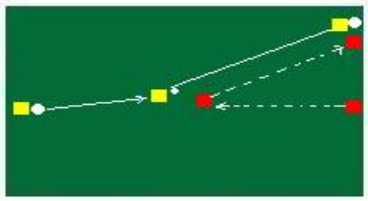

Fig. 4. 1x1 game inside a square area

b) Inside the 25x12m square area, with goalkeepers. The area is similar to that of the standard field; The goalkeeper passes the ball to his teammate, who must end very quickly; The defensive player tries to prevent him from scoring.
4 rounds x 3–4`; 1` break.

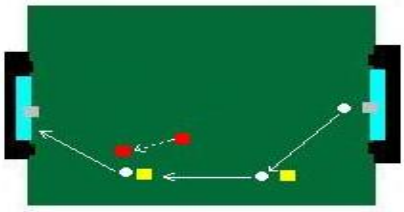

Fig. 5. 1x1 game inside the square area with goalkeepers

c) One gate, and one goalkeeper. A player starts moving from a 40m distance, rolling the ball at full speed, and the defender leaves from the endline. The player with the ball tries to surpass the defender in dribbling and to score.
Played on acting areas that are specific to the players' positions on the field. The number of actions is counted 5x.

Fig. 6. 1x1 game one gate, and one goalkeeper

2. ***2x1Game***
Similar to the 1x1 game, ex. a and c.
3. ***2x2 Game***
Inside a square of 30x15m, two gates and two goalkeepers.
In the areas that players act during official matches;
The gates are specifically positioned so that the players on the lateral sides be able to reach the centre for the ending of the phase. 4 rounds x 3–4`; 1` break.

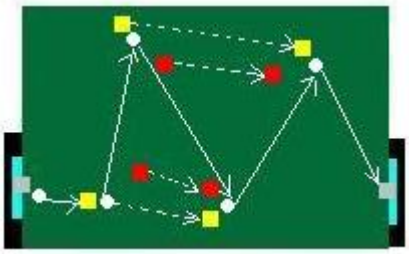

Fig. 7. Inside a square, two gates and two goalkeepers.

4. ***3x2; 2x3; 3x3 Game***
Ending the phase at one gate, on different acting areas. The phase is performed on the areas where players usually act during matches. Methodological tasks – free number of contacts, 3, 2, 1 contacts. The players must find solutions because such situations

may occur both in attacking and defending circumstances (numerical superiority, equality, inferiority). The basic means are the following: the Dribbling; the Speed of the combination; the Ending; the Power to combat. All players must get through all forms of the game. 3 rounds x 3–4`; 1`-1'30'' break.

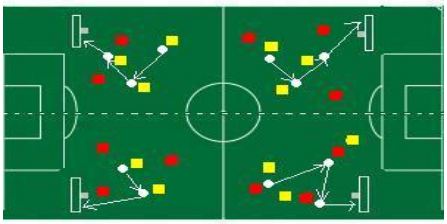

Fig.8. 3x2; 2x3; 3x3 game ending the phase at one gate

5. ***3x3; 4x4 Game***

Performed in squares of 30x30m; 40x40m; 50x40m with goalkeepers and standard gates + two players on the extremities. The ones inside the square play: 3,2, 1 – contact, and after a certain number of passes, they initiate the game passing to one of the players in the extremities, who cross passes for the shot on goal. The players on the extremities must not be attacked. The players in the centre must not get into the extremities' area. 3 rounds x 3–4`; 1`-1'30'' break.

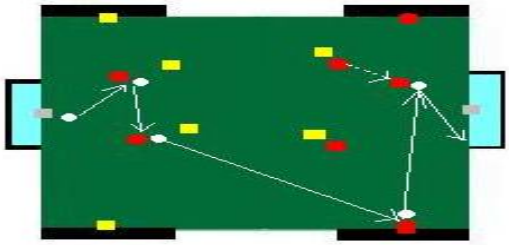

Fig. 9. 3x3; 4x4 game with goalkeepers and standard gates + two players on the extremities

6. ***5x5 Game***

Performed in a 60x40m square+two players on the extremities. The players in the centre must not enter the lateral area. They can use one-two passes and on getting the ball they shot on goal. 4 rounds x 4`; 1`-1'30'' break.

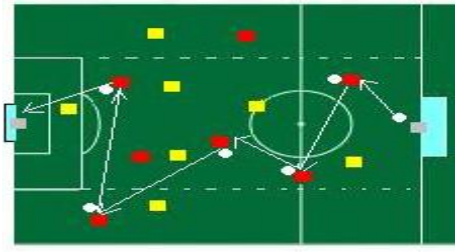

Fig. 10. 5x5 inside the square area with goalkeepers + two players on the extremities

7. ***4x4; 5x5 Game***

Game on two standard gates with goalkeepers, on ½ of the field, + four players on the extremities, two for each lateral side. The players in the centre use: 3, 2, 1 – contacts, and after a certain number of passes, they initiate the game towards one of the extremities, who shall pass. . 4 rounds x 4`; 1`-1'30'' break.

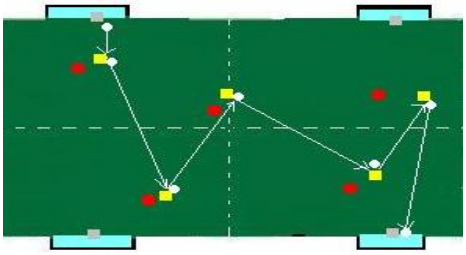

Fig. 11. 4x4;5x5 game with goalkeepers, on ½ of the field, + four players on the extremities, two for each

8. ***4x4; 5x5 Game***
Four gates of 5/2m positioned laterally, with goalkeepers. A 50x30 m surface. The players can score in the two gates in the following way: players on the left only in the right gate and the viceversa. The players can play in 3; 2 contacts or freely at full speed, individual action. The headed goal scored is worth 3 points. 4 rounds x 4`; 1`-1'30'' break.

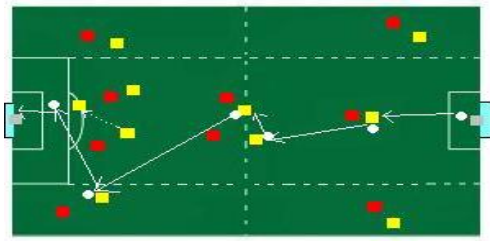

Fig. 12. 4x4; 5x5 game - four gates of 5/2m positioned laterally, with goalkeepers.

e. The Mathematical and Statistical Method. Data were collected according to the established purpose and then they were processed, so that the information attesting the veracity of the experiment was obtained in an appropriate statistical form. The statistical processing of the registered results has been achieved by the use of Microsoft Office Excel 2007.
f. The Comparative Method was used to compare the assessments regarding the selection of the most effective exercises and their verification for correct practicability
g. The Graphical Method that emphasizes the evolution of the results of the studied period, the progress or regress of the subjects and the team.

5. FINDINGS AND RESULTS
The results of the research have confirmed the sustainability of the training programmes specific to the lateral side, thus obtaining a special progress of the experimental group compared to the control group. Initially, there has been no significant performance difference ($p > .05$); this was, in fact, one of the prerequisites for the achievement of the experiment. Nevertheless, at the final testing, **there have been significant differences between the two groups, statistically speaking** ($p < .05$).
For the **endurance - running 12 min** test, the average performance of the experimental group athletes (3165m) has been significantly better than the average performance of the control group athletes (3071m), and the coefficient of variation evinces homogeneity, compared to the control group.
For the **speed on a 30m distance** test, the average performance of the experimental group athletes (4,11s) has been significantly better than the average performance of the control group athletes (4,19s), and the coefficient of variation evinces homogeneity, compared to the control group.
For the **speed on a 50m distance** test, the average performance of the experimental group athletes (6,54s) has been significantly better than the average performance of the control group athletes (6,65s), and the coefficient of variation evinces homogeneity, compared to the control group.
For the **ball mastery through markers followed by shot on goal** test, the average performance of the experimental group athletes (56points) has been significantly better than the average performance of the control group athletes (50points), and the coefficient of variation evinces homogeneity, compared to the control group.
For the **cross passes within a marked area** test, the average performance of the experimental group athletes (55points) has been significantly better than the average performance of the control group athletes (43points).
For the **header on goal by the players on the lateral sides** test, the average performance of the experimental group athletes (52points) has been significantly better than the average performance of the control group athletes (42 points), and the

coefficient of variation evinces homogeneity, compared to the control group.

The discussed results are illustrated in the summary table of the statistical tests and the charts of the averages that are hereinafter presented.

Table 2. Physical tests - Summarizing table of the results evolution for the two groups included in the study

	Running 12 min. (alergare 12 min.)				Speed 30m (viteza 30m)				Speed 50m (viteza 50m.)			
	Experiment		Control		Experiment		Control		Experiment		Control	
	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final
X	2841.25	3165	22890	24570	34.31	32.9	34.46	33.53	54.55	52.32	54.71	53.27
S	18.077	27.77	2861.25	3071.25	4.288	4.112	4.3075	4.191	6.818	6.54	6.838	6.658
Cv%	0.636	0.877	24.748	27.483	0.036	0.0254	0.02	0.037	0.053	0.055	0.029	0.062
m	6.4103	9.849	0.864	0.8948	0.84	0.6199	0.476	0.887	0.777	0.849	0.4382	0.934
m^2	41.0927	97.005	8.776	9.746	0.012	0.009	0.0072	0.013	0.0188	0.0196	0.0106	0.022
t		27.54		16.01		11.2605		7.715		10.235		7.351

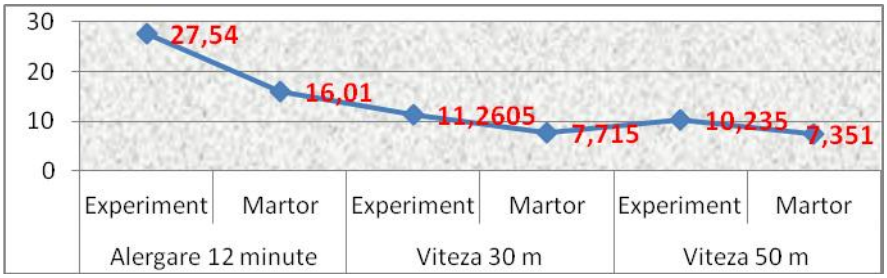

Fig. 13. Evolution coefficient of significance t from physical tests

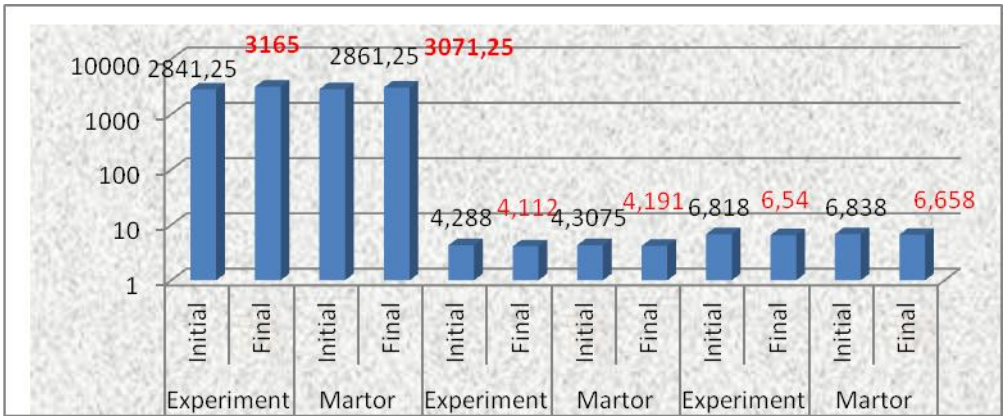

Fig. 14. Evolution on the arithmetic mean of the physical test

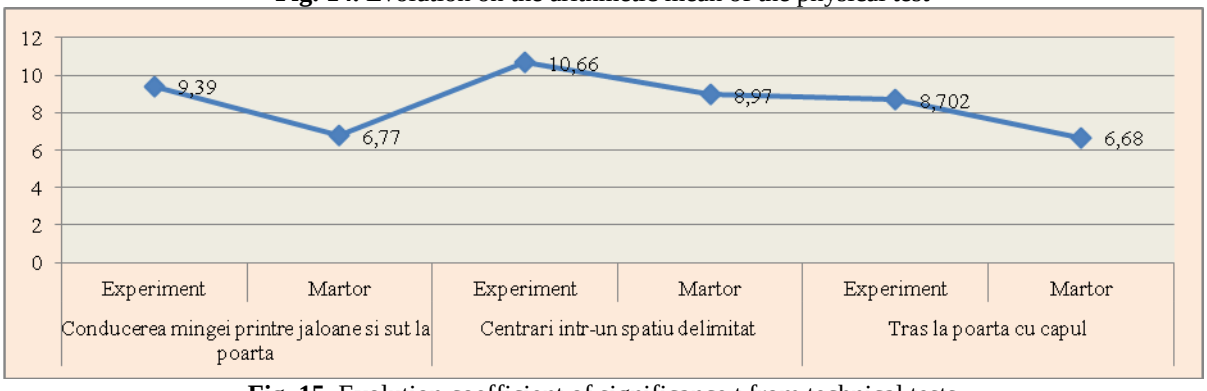

Fig. 15. Evolution coefficient of significance t from technical tests

Table 3. Technical tests- Summarizing table of the results evolution for the two groups included in the study

	ball mastery through markers followed by shot on goal				cross passes within a marked area				header on goal by the players on the lateral sides			
	Experiment		Control		Experiment		Control		Experiment		Control	
	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final
X	34	56	34	50	20	55	20	43	20	52	20	42
S	5.878	2.927	5.444	3.453	0	9.258	0	7.071	7.559	7.039	5.345	7.529
Cv%	17.481	5.275	15.89	6.942	0	16.83	0	16.63	37.796	13.569	26.72	17.98
m	2.084	1.038	1.93	1.224	0	3.28	0	2.507	2.68	2.496	1.89	2.67
m^2	4.345	1.077	3.72	1.499	0	10.77	0	6.287	7.185	6.231	3.592	7.12
t		**9.39**		**6.77**		**10.66**		**8.97**		**8.702**		**6.68**

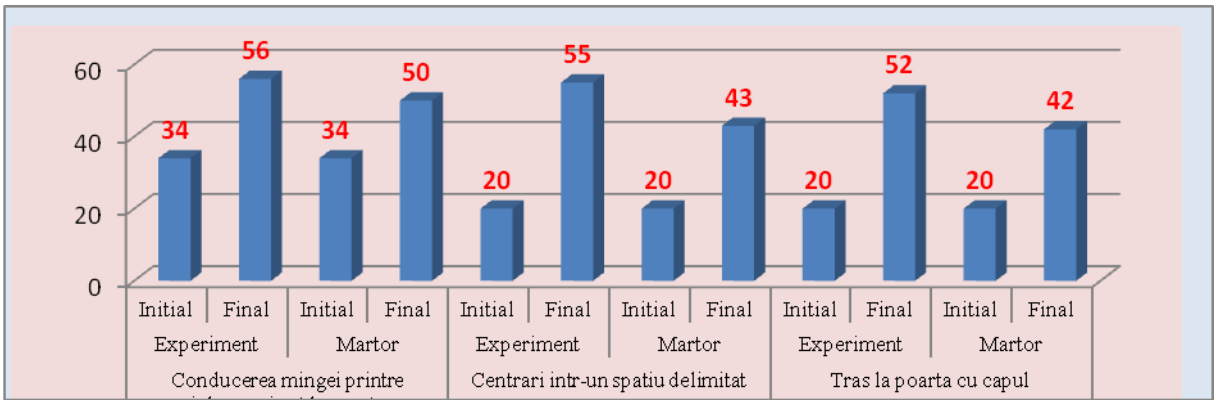

Fig. 16. Evolution on the arithmetic mean of the technical test

6. CONCLUSIONS AND RECOMMENDATIONS

The acquired results demand for new conditions of approaching the training of junior players under 19**.**

The conclusions of the study derive from the basic pedagogical experiment which demonstrates numerically the hypotheses of the study.

Recommendations for the practical activity, following the experiment and its results:

-the implementation of the training programme must be done after the determination of the players' training level;

-the necessity of using differential training according to positions and acting areas, in the training process;

-the coaching of junior players must be structured on the principle of direction and adjustment, according to the intensity of the response and adaptation of the sporstman's body to the training demands

-the assessment system must emphasize, for each area of the field, the physical and technical features of the players.

-at the the end of the junior stage the soccer player must be able to give physical, technical and tactical solutions, according to the basic acting area and additional areas;

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