

A STUDY ON OPTIMIZING TACTICAL ELEMENTS OF COOPERATION IN OFFENSIVE TRANSITIONS AND ATTACKS IN THE U18 GROUP IN FOOTBALL

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Abstract:

The purpose of this study is to highlight the effectiveness of a training program focused on developing tactical collaboration during offensive transitions and in the attacking phase for the U18 age group. The research employs methods specific to the field of physical education and sports science, such as systematic observation, video analysis, testing, experimentation, and statistical data analysis. The implementation of a training program based on small-sided games, numerical superiority and inferiority scenarios, positional drills, and game phase simulations leads to improvements in reaction speed, the synchronization of collective actions, effective use of space, and the efficiency of finishing attacks. The research results highlight that the development of tactical collaboration leads to an improvement in the quality of decision-making and offensive efficiency, contributing to superior performance in competitions for the U18 category.

Introduction

Contemporary football is characterized by a fast-paced game, in which the efficiency of the transition between defensive and offensive phases is one of the most important factors in athletic performance. Particularly at the U18 youth level, the development of tactical elements of collaboration during the offensive transition is an essential prerequisite for training future elite players. This study aims to optimize the tactical relationships among players when regaining possession of the ball and rapidly organizing the attack. Football is one of the most complex team sports, characterized by the constant interaction between technical, tactical, physical, and psychological components. The evolution of the game over the past decades has led to a considerable acceleration in the pace of competition, which has increased the importance of transitions between phases of play. [1,6] Elite teams pay particular attention to the moments immediately following ball recovery, as these offer the greatest opportunities to destabilize the opposing team's defensive organization. In youth football, the U18 category represents the final stage of development before the transition to the senior level. During this period, players already possess technical and physical abilities close to those of adults, and the focus of training shifts toward refining tactical and cognitive processes. [5,12] The ability to quickly interpret game

situations, cooperate effectively with teammates, and make optimal decisions in a very short amount of time sets high-potential players apart from other players. The offensive transition begins the moment possession is regained and ends once the attack is organized or completed. The literature shows that a significant percentage of goals scored in modern football result from attacks initiated immediately after regaining possession, when the opposing team is still out of position. For this reason, developing the principles of collaboration among players must be a priority objective of tactical training. At the U18 level, the effectiveness of the offensive transition depends on several factors: reaction speed upon regaining possession, off-the-ball movement, synchronization of runs, body positioning, communication among players, and the selection of the optimal route of progression. [4,7,9] These components must be developed through training methods adapted to the players' age and competitive level. [2,8,10]

This study aims to identify modern training methods capable of optimizing tactical collaboration during offensive transitions and attacks, thereby contributing to increased collective efficiency in U18 teams.

Material and method

The aim of this research is to optimize the tactical elements of collaboration during the offensive transition and in the attacking phase among U18 players by implementing a training program based on exercises specific to the modern game of football. The research aims to identify the most effective methodological approaches that contribute to the development of cooperation among players in the moments immediately following ball recovery, as well as to evaluate their impact on attacking efficiency and team performance.

To achieve the proposed goal, the following objectives were formulated:

- analysis of the specialized literature on the characteristics of the offensive transition in modern football;
- identification of the main tactical elements of collaboration used by elite teams;
- development of an experimental program aimed at developing tactical collaboration at the U18 level;
- assessment of the players' initial level through specific tests and observations;
- Implementation of the training program during the experiment;
- Assessment of the final level of tactical performance;
- Comparison of the results obtained before and after the program was implemented;
- Formulation of methodological recommendations for coaches who train U18 youth teams.

General Hypothesis: Implementing a training program focused on optimizing tactical coordination during offensive transitions and attacks leads to improved offensive efficiency among U18 players.

Specific Hypotheses:

H1. Developing coordination among players leads to a reduction in the time required to organize an attack after regaining possession.

H2. The use of specific offensive transition drills increases the number of attacks concluded with a shot on goal.

H3. The implementation of small-sided games and situational drills improves the synchronization of collective actions and spatial awareness.

H4. The experimental program leads to an increase in the effectiveness of progressive passes and collective actions carried out in the final third of the field.

The research was conducted over the course of a competitive season, spanning 12 weeks, with a U18 football team participating in a national junior championship.

The pedagogical experiment consisted of three stages:

- initial assessment;
- implementation of the experimental program;
- final assessment.

The training program was integrated into the team's weekly schedule without altering the overall structure of the training process.

The experimental group consisted of 20 U18 players, aged 17 to 18.

The characteristics of the group were as follows:

- number of athletes: 20;
- competitive experience: 8–10 years;
- training frequency: 5 sessions per week;
- one official match per week.

The following methods were used in conducting the study:

Literature review

Specialized works on sports training theory, football tactics, performance analysis, and youth development were analyzed.

Pedagogical observation

During the experiment, the following were monitored:

- cooperation between positions;
- speed of attack organization;
- quality of tactical decisions;
- off-the-ball movement;
- effectiveness of quick attacks.

Video analysis

All matches and training sessions were recorded and analyzed using specific indicators of tactical performance.

The following were evaluated:

- the number of offensive transitions;
- the duration of the transition;
- the number of passes leading to a shot on goal;

- the effectiveness of attacks;
- player positioning;
- tactical relationships between units.

The Pedagogical Experiment

The experimental program served as the primary research method.

It aimed to develop:

- the fast break;
- the counterattack;
- positional play;
- cooperation between the team's lines;
- the relationship between midfielders and forwards;
- occupying open spaces;
- rapid ball progression.

Statistical Method

The results were statistically analyzed using descriptive statistics:

- arithmetic mean;
- standard deviation;
- coefficient of variation;
- t-test for paired samples;
- level of statistical significance ($p < 0.05$).

Experimental Program

The training program was designed to last 12 weeks and included two specific tactical sessions in each microcycle. [13,14,15]

Main methods used:

Exercise 1 – 5 vs. 4 Offensive Transition

Objective:

- ball recovery;
- rapid progression;
- finishing within a maximum of 10 seconds.

Exercise 2 – Positional play 7 vs. 7 + 3 neutral players

Objective:

- maintaining possession;
- changing the direction of the attack;
- occupying spaces.

Exercise 3 – Quick Attack After Ball Recovery

Setup:

- small field;
- two regulation-sized goals;
- 6-second limit for finishing.

Exercise 4 – Numerical Superiority

Scenarios:

- 3 vs. 2;
- 4 vs. 3;
- 5 vs. 4.

The focus was on choosing the most efficient route and coordinating movements.

Exercise 5 – Conditional Drill

Rules:

- maximum of two touches;
- vertical passes required;
- quick finish;
- immediate role reversal after losing possession

Evaluation Indicators

To assess the program’s effectiveness, the following indicators were tracked:

- number of successful offensive transitions;
- average time until the attack is completed;
- number of attacks concluded with a shot;
- number of goals scored;
- percentage of successful passes in attack;
- number of effective team plays;
- efficiency of inter-unit coordination;
- number of ball recoveries followed by a quick attack;
- offensive efficiency index.

These indicators were recorded in both the initial and final assessments to highlight the effects of the experimental program on the U18 team’s tactical performance. [3,11]

To evaluate the effectiveness of the experimental program, the tactical indicators recorded before and after its implementation were compared. The analysis examined the changes that occurred in the players’ collaboration during the offensive transition phase and in the organization of the attack. [7,8,9]

Table 1. Trends in Key Tactical Indicators

Indicators	Initial testing	Final testing	Difference	Improvement (%)
Successful offensive transitions (no./game)	9,8	13,6	+3,8	38,8
Attacks ending in a shot (no./game)	7,2	10,1	+2,9	40,3
Goals Scored (No./Game)	1,6	2,5	+0,9	56,3
Successful progressive passes (%)	72,4	81,7	+9,3	12,8
Average transition time (sec.)	10,4	7,6	-2,8	-26,9
Effective team plays (no./game)	18,3	25,8	+7,5	41,0



Chart No. 1 - Successful offensive transitions (no./game)

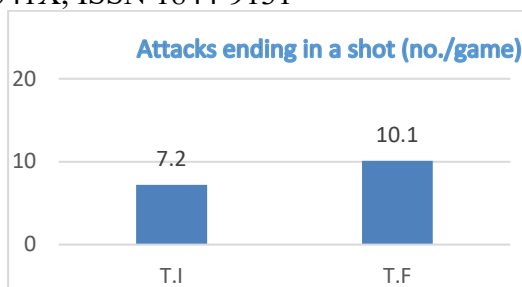


Chart No.2 - Attacks ending in a shot (no./game)



Chart No. 3 - Goals Scored (No./Game)

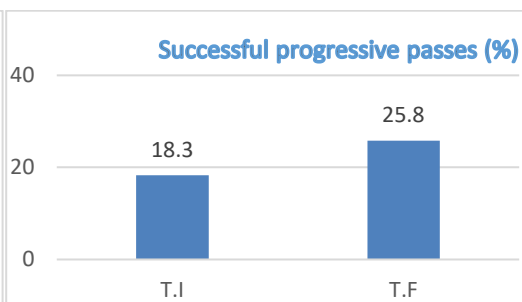


Chart No. 4 - Successful progressive passes (%)

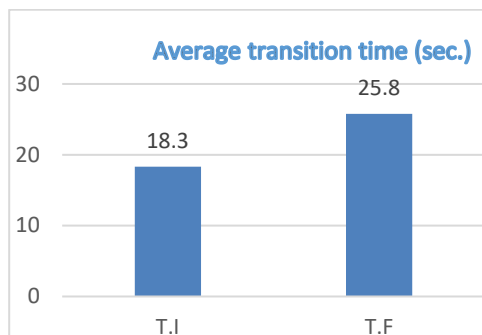


Chart No. 5 - Average transition time (sec.)

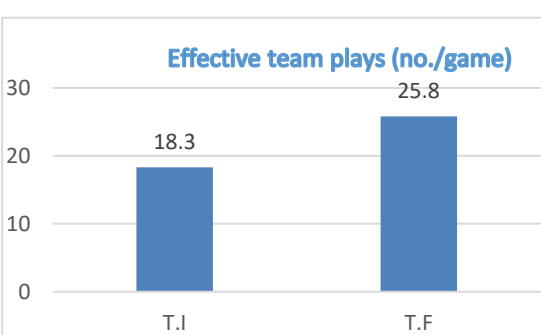


Chart No. 6 - Effective team plays (no./game)

The results indicate a significant improvement in all the indicators analyzed. The largest percentage increase was observed in the number of goals scored and effective team plays, demonstrating the positive impact of the experimental program on offensive efficiency.

To test the significance of the differences between the initial and final assessments, the t-test for paired samples was applied.

Table 2. Statistical Analysis: t-Test

Indicators	t	p
Successful offensive transitions	4,37	<0,001
Completed attacks	3,94	0,001
Progressive passes	3,42	0,003
The Transition Period	4,81	<0,001
Class-Action Lawsuits	4,28	<0,001

The results indicate the existence of statistically significant differences ($p < 0.05$) between the two assessment time points. Thus, the hypothesis that the training program optimizes tactical coordination in the offensive transition is confirmed.

Analysis of the results highlights that the use of specific tactical coordination exercises produced significant changes in the team's collective behavior. The reduction in the time required to organize an attack after regaining possession demonstrates improved reaction time and decision-making speed. Players identified progression options more quickly and effectively exploited open spaces. The increase in the number of attacks culminating in a shot confirms the effectiveness of exercises based on small-sided games and numerical superiority situations. These exercises have fostered the development of tactical relationships between midfielders and forwards, as well as improved the synchronization of off-the-ball movements. The higher percentage of successful progressive passes reflects better spatial awareness on the field and a more effective selection of play options. Furthermore, collaboration between the different units became more cohesive, and offensive transitions unfolded at a faster pace. The increase in the number of effective collective plays suggests that the players have better understood and applied the tactical principles specific to modern offensive play.

Conclusions

The results obtained are consistent with the literature, which highlights the importance of developing tactical principles as early as the junior level. Recent research shows that the effectiveness of high-performing teams depends largely on the quality of their transitions and the players' ability to cooperate in dynamic situations. The experimental program aimed to incorporate exercises that closely mirrored the actual demands of competition, which enabled the rapid transfer of acquired skills to official matches. Situations involving numerical superiority and inferiority, positional play, and finishing drills stimulated the development of tactical perception and decision-making. Another important aspect is the use of video analysis in the training process. Reviewing game phases together with the athletes

helped raise awareness of tactical errors and improve collaboration between different units. At the same time, the results highlight the need to systematically include offensive transition drills in training plans for the U18 category. These drills not only develop tactical skills but also adaptability, communication, and an understanding of the collective principles of the game. Although the results are encouraging, the study also has certain limitations. The small sample size and the fact that the study was conducted with a single team limit the generalizability of the conclusions. Future research should include a larger number of participants and compare multiple tactical training models. Overall, the data support the effectiveness of a training program aimed at optimizing tactical collaboration during the offensive transition and confirm the role of this component in improving the performance of U18 teams.

Based on an analysis of the results obtained during the research, the following conclusions can be drawn:

- ✓ The experimental program, which focused on developing tactical elements of collaboration in offensive transition and attack, led to a significant improvement in the effectiveness of the U18 team's offensive play.
- ✓ Specific offensive transition drills helped reduce the time needed to organize an attack immediately after regaining possession, making it easier to exploit the opponent's defensive imbalance.
- ✓ The use of small-sided games, numerical superiority and inferiority scenarios, and positional drills improved cooperation among players, the synchronization of movements, and the rational use of playing space.
- ✓ The increase in the number of attacks concluded with a shot and in goals scored confirms the effectiveness of the training methods used and demonstrates the transfer of tactical skills to competition.
- ✓ Statistical analysis revealed significant differences between the initial and final assessments for most of the indicators analyzed, confirming the research hypothesis.
- ✓ Video analysis proved to be an effective tool for identifying tactical errors, developing the ability to analyze the game, and improving the athletes' decision-making process.
- ✓ Optimizing tactical coordination between units helps increase team cohesion and develop a modern style of play characterized by mobility, intensity, and efficiency.
- ✓ The U18 category is an ideal stage for consolidating collective tactical principles, and the systematic integration of offensive transition drills can help players adapt to the demands of high-performance football.

Based on the findings of the research, the following recommendations are made:

- Including offensive transition drills in every training microcycle;
- using small-sided games to develop tactical relationships and decision-making;

- monitoring tactical indicators through video analysis and systematic observation;
- periodically evaluating the effectiveness of collaboration between team units;
- tailoring tactical tasks to players' profiles and positions;
- developing communication and coordination between the team's lines;
- the use of constraint-based exercises (Constraints-Led Approach), which encourage adaptation to real-game situations;
- Integrating modern performance analysis technologies (GPS, video platforms, tactical monitoring apps) into the training process.

Implementing these recommendations can help develop an effective playing style and improve the performance of U18 youth teams.

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