



The impact of using different training methods on developing speed-strength and counter-offensive football skills in young players

El impacto del uso de diferentes métodos de entrenamiento en el desarrollo de habilidades de velocidad-fuerza y contraataque en jugadores jóvenes

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Abstract

Objective: To identify the effect of each of the two methods on developing kinetic response speed and speed-strength in fast breaks and counter-offensive in football among young players, and identify the differences between the two methods in developing kinetic response speed and speed-strength in fast breaks and counter-offensive in football among young players.

Research methodology: The researcher used the experimental method with two groups (experimental and control) and pre- and post-tests, as it was the best way to solve the research problem. The research community was selected purposively, consisting of young football players in Diyala Governorate, distributed across (5) clubs: Diyala, Shaharban, Al-Khalis, Baladruz, and Al-Shaheed Arkan (Kanaan). The total number of players was (82). The researcher selected the research sample randomly by lottery. Players from the Diyala and Al-Khalis clubs were chosen to represent the experimental group, while the control group was represented by the Al-Shaheed Arkan (Kanaan) club. (12) players were selected for each group, resulting in a final sample size of (36) players, representing (43.91%).

Results: The results of all the tests indicate that the three research groups achieved their objectives in terms of significant impact, with significant differences between the groups

Conclusions: The training methods (repetition and circuit training) have a positive impact on developing certain kinetic, physical, and technical skills in football.

Keywords

Different training methods; speed-strength; counter-offensive; football.

Resumen

Objetivo: Identificar el efecto de cada uno de los dos métodos en el desarrollo de la velocidad de respuesta cinética y la relación velocidad-fuerza en contraataques y contraataques en jugadores jóvenes de fútbol, e identificar las diferencias entre ambos métodos en el desarrollo de la velocidad de respuesta cinética y la relación velocidad-fuerza en contraataques y contraataques en jugadores jóvenes de fútbol.

Metodología de la investigación: El investigador utilizó el método experimental con dos grupos (experimental y control) y pruebas previas y posteriores, por ser la mejor manera de resolver el problema de investigación. La comunidad de investigación se seleccionó intencionalmente, compuesta por jóvenes futbolistas de la Gobernación de Diyala, distribuidos en cinco clubes: Diyala, Shaharban, Al-Khalis, Baladruz y Al-Shaheed Arkan (Kanaan). El número total de jugadores fue de 82. El investigador seleccionó la muestra de investigación aleatoriamente por sorteo. Se seleccionaron jugadores de los clubes Diyala y Al-Khalis para representar al grupo experimental, mientras que el grupo de control estuvo representado por el club Al-Shaheed Arkan (Kanaan). Se seleccionaron 12 jugadores para cada grupo, lo que resultó en una muestra final de 36 jugadores, lo que representa el 43,91 %.

Resultados: Los resultados de todas las pruebas indican que los tres grupos de investigación alcanzaron sus objetivos en términos de impacto significativo, con diferencias significativas entre ellos.

Conclusiones: Los métodos de entrenamiento (repetición y entrenamiento en circuito) tienen un impacto positivo en el desarrollo de ciertas habilidades cinéticas, físicas y técnicas en el fútbol.

Palabras clave

Diferentes métodos de entrenamiento; velocidad-fuerza; contraataque; fútbol.

Introduction

The field of sports training has witnessed remarkable development in recent decades as a result of the rapid impact of the scientific and technological revolution. This has directly affected the structure, organization, and content of the training process, which no longer relies solely on traditional methods. Instead, it now depends on an integrated system of modern scientific approaches that consider the age-related and individual characteristics of trainees, as well as the requirements of their specialized activities. This development has enriched training programs with specialized methods aimed at achieving individualized training, ensuring a direct impact on developing the players' technical, physical, functional, tactical, psychological, and mental aspects.

Physical fitness, with all its associated physical attributes, has played a crucial role in the game. Most scholars believe that everything that happens in the game depends on the physical elements upon which specific physical fitness is built. It is impossible to play at a high level without this fitness. Speed is one of its most important elements, significantly affecting the player's performance. Coaches must focus on and develop speed, as modern football players must possess it to execute skills as quickly as possible, which has become a hallmark of modern football for most of the world's leading teams (Rey Gómez et al., 2025 : Schena & Mendes Capraro, 2025).

Football is a team sport that enjoys widespread popularity among various age groups, thanks to its speed, excitement, and thrill, resulting from the organized interplay between the players' physical, technical, and tactical performance. Playing this game requires a high level of mastery of basic individual skills, as well as effective team coordination. This makes structured, scientific training essential for raising the players' technical level (Hilal et al., 2025: Villaseca-Vicuña et al., 2025)

Indicated that employing specific exercises designed according to the requirements of kinetic and skill performance effectively contributes to developing speed of movement and accuracy in executing basic football skills. This underscores the importance of adopting specialized training methods linked to the specificities of skill performance as a fundamental approach to achieving sustainable development in players' performance.

A training unit containing a number of exercises must have a scientific program for its application and practice in terms of the sequence of exercises, methods of execution, repetition, and the times for work and rest, so that the players practice them with more motivation and activity than they currently do, and so that they are not used in a monotonous way that causes boredom among the players, as "the modern practical approach advocated by experts in kinetic learning and training methods calls for diversification in educational and training methods and techniques" (Yunus & Aditya , 2024 : Hazaa et al., 2026). According to the above, the importance of research lies in using diverse methods, namely (the repetitive method and the circular method with and without ball exercises) to develop fast attack and counter-attack in football.

Research problem

Despite the fruitful results achieved by scientists, experts, and specialists in training methods and techniques, the training process still relies on traditional methods. Through the researchers' readings of sports training books and their meetings with coaches and teachers, it was observed that many coaches use diverse training methods. Therefore, the researchers decided to use different training methods that include a set of exercises (using the repetitive method and the circuit method) to develop both the speed of kinetic response and speed-strength in developing fast attacks and counter-attacks in football among young football players.

Research objective

- To identify the effect of each of the two methods on developing kinetic response speed and speed-strength in fast breaks and counter-attacks in football among young players.
- To identify the differences between the two methods in developing kinetic response speed and speed-strength in fast breaks and counter-attacks in football among young players.

Research hypotheses

- There are significant differences between the pre-test and post-test results in kinetic response speed and speed-strength in fast breaks and counter-attacks in football.
- There are significant differences in the post-test results in kinetic response speed and speed-strength in fast breaks and counter-attacks in football.

Research fields

- Human field: Young football players in Diyala Governorate.
- Time field: (19/10/2025) to (12/12/2025)
- Spatial field: Training fields at Diyala Sports Club.

Method

Research Methodology

The researcher used the experimental method with two groups (experimental and control) and pre- and post-tests, as it was the best way to solve the research problem.

Community and sample research

The research community was selected purposively, consisting of young football players in Diyala Governorate, distributed across (5) clubs: Diyala, Shaharban, Al-Khalis, Baladruz, and Al-Shaheed Arkan (Kanaan). The total number of players was (82). The researcher selected the research sample randomly by lottery. Players from the Diyala and Al-Khalis clubs were chosen to represent the experimental group, while the control group was represented by the Al-Shaheed Arkan (Kanaan) club. (12) Players were selected for each group, resulting in a final sample size of (36) players, representing (43.91%). The sample size was larger than the current size, but a number of individuals withdrew from the sample due to special circumstances.

Research Tools and Methods

To solve a research problem, any researcher must provide appropriate research tools to ensure the success of their research. The research tools and methods included the following:

- Arabic and foreign sources.
- The Internet.
- The supporting research team.
- Tests and measurements.
- Statistical methods.
- A device for measuring kinetic response speed.
- A watch. Two electronic timers.
- Measuring tape.
- Adhesive tape.
- Regular footballs.
- A regulation football pitch.
- Points.
- Cones.
- Obstacles of varying heights.
- Hugs.

- Agility ladder.

Tests Used in the Research

First: Speed-Strength Test (Al-Hiti, 2011)

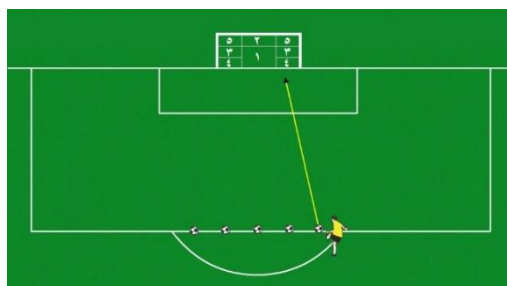
- Test Name: Single-Leg Hopping for a Distance of 30 Meters
- Test Objective: To measure the speed-strength of the leg muscles.
- Equipment Used:
 - Stopwatch
 - Measuring Tape
 - Observer
 - Marked Field with a Start and Finish Line
- Performance Description:
 - The athlete stands touching the starting line with their jumping leg and the free leg extended behind them.
 - Upon hearing the start signal, the athlete hops (hops) on one leg to the finish line for a distance of 30 meters.

Second: Shooting Accuracy Test on a Squared Goal (Al-Shammari, 2011)

- Test Objective: To measure shooting accuracy towards the goal.
- Equipment Used: A tape measure to mark the target area. A standard football goal. A football field. Five balls.
- Procedure: Five balls are placed on the penalty area, 18 yards from the goal line. The distance between the balls is 1 yard. The player shoots into the marked areas according to their importance and difficulty, sequentially, one ball after the other, while running.
- Scoring Method: The number of shots that enter the goal from both sides is counted. Each of the five balls is scored as follows:
 - 5 points for area 5.
 - 4 points for area 4.
 - 3 points for area 3.
 - 2 points for area 2.
 - 1 point for area 1.
 - 0 points for shots outside the goal.

Points are awarded for each ball, as specified for the area being calculated, taking into account the ball touching the tape. Points are awarded for the area above, according to the numbered areas, and zero if it goes outside the goal boundaries.

Figure 1. Shown the shooting accuracy test on a squared goal



Exploratory Experiment

The researcher conducted an exploratory experiment on October 19, 2025, at 2:00 PM on a sample of (6) players, not part of the research sample, at the training field of Diyala Sports Club. Tests and measurements were administered to achieve the following:

- To overcome any difficulties the researcher might encounter while conducting the research.
- To determine the time required for the tests and measurements.
- To confirm the suitability of the physical tests for the research sample.
- To confirm the suitability of the equipment and tools used.

Field Research Procedures

Pre-Tests

The researcher conducted pre-tests on the research sample on October 23, 2025, at 2:00 PM at the training field of Diyala Sports Club. The research sample was present, having been summoned along with the coaching staff. Transportation and all necessary requirements were provided, and the variables and temporal and spatial conditions of the experiment were controlled.

Training Methodology

The researcher implemented a training methodology to develop speed-strength using various training methods. This methodology was informed by previous studies and scientific references, as well as scientific and practical expertise and the input of experts in sports training and football, as follows:

- The prescribed methodology was applied to the research sample. The researcher ensured uniformity in all aspects of the methodology, including the duration and number of training sessions per week, the number of repetitions, rest periods between exercises, and the duration of each training segment.
- The training methodology was implemented over six weeks, with three sessions per week, resulting in 18) training sessions. The selection of this duration is attributed to ensuring adaptation and the development of kinetic pathways in the sample, which aligns with the methodology adopted by (Zughair et al., 2025), who indicated that time periods ranging from (6-8) weeks are sufficient to produce significant differences and consolidate kinetic programs in memory. The program was implemented from October 26, 2025, to December 4, 2025.
- Rest periods between exercises ranged from (1-2) minutes, and between sets from (3-5) minutes until recovery. During these periods, positive flexibility and general muscle elasticity exercises were performed. This is confirmed by (Aceña Rodríguez et al., 2025), who emphasizes that the rest period must be sufficient to recover strength and begin the next exercise.
- The groups were divided into three: the control group represented the Martyr Arkan Club, the first experimental group represented the Al-Khalis Club (circuit training), and the second experimental group represented the Diyala Club (repetitive training). These are some clarifications regarding the training program.

The program aims to develop rapid kinetic response speed, speed-strength, and fast offensive ability.

- The intensity ranges from 65% to 100%.
- The repetitive circuit training method was used.
- The program duration was six weeks, with three training units per week.
- The total number of training units was 18.
- The average duration of each training unit was 60 minutes, divided into three parts:
 - First: The preparatory section lasted 405 minutes and included warm-up exercises.

- Second: The main section lasted 1080 minutes and covered physical, kinetic, and skill objectives.
- Third: The concluding section lasted 135 minutes, as shown in Table 1.

Table 1. Shows the sections of each training unit, the duration per day and week, and the percentage.

Training Unit Sections	Time per unit (minutes)	Time per week	Total time	Percentage
Preparatory Section	15	45	405	%25
Main Section	40	120	1080	%66.6
Concluding Section	5	15	135	%8.3
Total	60	180	1620	%99.9

Post-Tests

The researcher conducted post-tests on the research sample on December 9, 2025, at 2:00 PM at the training field of Diyala Sports Club. The researcher maintained the same variables for the research.

Statistical Methods

The researcher used the Statistical Package for the Social Sciences (SPSS) to process the data.

Findings

Presentation and Analysis of the Speed-Strength Results for the Three Research Groups:

Table 2. Shows the arithmetic means, standard deviations, calculated and tabulated t-values, and the significance of the differences for the three research groups in the speed-strength test.

Groups	Pre-test		Post-test		T value calculated	Level Sig	Type Sig
	Arithmetic mean	Standard deviation	Arithmetic mean	Standard deviation			
Control	4.0	2.9	6.0	1.3	3.3	0.000	Sig
Experimental First	4.5	3.2	8.5	2.5	5.0	0.000	Sig
Experimental Second	4.5	2.8	7.0	1.3	4.1	0.000	Sig

Table 3. Shows the analysis of variance for the post-tests of velocity-characterized strength for the three research groups

Source of variance	Sum of squares	Mean of squares	F value calculated	Level Sig	Type Sig
Between groups	50.72	25.36	9.7	0.000	Sig
Within groups	185.72	2.6			Sig
Total	236.44				

Table 4. Shows the results of (L.S.D) to determine the least significant difference for the speed-strength test between the three research groups.

Groups	Arithmetic mean of difference	Results of the differences	c.s.p	Type Sig
Control - Second experimental	8.5-6.0	2.5	0.2	Sig to the second experiment
Control - First experimental	7.0-6.0	1.0		Sig to the first experiment
First experimental control - Second experimental control	8.5-7.0	1.5		Sig to the second experiment

Presentation and analysis of the scoring skill results for the three research groups:

Table 5. Shows the arithmetic means, standard deviations, calculated and tabulated t-values, and the significance of the differences for the three research groups in scoring skills

Groups	Pre-test		Post-test		T value calculated	Level Sig	Type Sig
	Arithmetic mean	Standard deviation	Arithmetic mean	Standard deviation			
Control	16.5	3.1	18.10	2.0	3.7	0.000	Sig
Experimental First	17.0	3.3	22.5	2.4	5.6	0.000	Sig
Experimental Second	16.76	3.6	25.0	2.5	4.3	0.000	Sig



Table 6. Shows the analysis of variance for the post-tests of the shooting skill for the three research groups

Source of variance	Sum of squares	Mean of squares	F value calculated	Level Sig	Type Sig
Between groups	60.30	30.15	10.3	0.000	Sig
Within groups	200.20	2.9			
Total	260.50				

Table 7. Shows the results of the (L.S.D) test to determine the least significant difference in the target shooting skill test between the three research groups.

Sets being compared	Arithmetic mean of difference	Results of the differences	c.s.p	Type Sig
Control - Second experimental	25.0-18.10	6.9	0.2	Sig to the second experiment
Control - First experimental	22.5-18.10	4.4		Sig to the first experiment
Second experimental control - First experimental control	25.0-22.5	2.5		Sig to the second experiment

Discussion

The results of all the tests indicate that the three research groups achieved their objectives in terms of significant impact, with significant differences between the groups. The training units within the training program facilitated this, which was consistent with the optimal use of training methods employed in the research. These methods were tailored to the degree of difficulty of the physical and skill attributes, and errors were corrected through feedback and the optimal use of necessary training tools and equipment. The tests showed that the first experimental group, represented by the repetitive method (players from the University of Diyala football team), showed the best results in terms of significant differences. The researcher attributes this to the fact that this type of exercise is easily understood. It allows trainees uninterrupted time to focus on performing a task. Therefore, the researchers focused on the fundamental aspects that enhance the development of speed-strength and kinetic response capabilities during training. In the researchers' opinion, this led to the organization and adaptation of reflexive response speed in coordinating movement, rhythm, and neural stimulation, which positively affected the speed output and technical performance. Repetitive training with specific methods and tools is a means of facilitating this development in performance, as the application of the training program led to "improving the essential elements of running speed by developing the capabilities of the research sample through increasing the strength of the contributing muscle groups due to the increased resistance applied to these muscles" (Zambrano Noboa et al., 2025)

Furthermore, the nature of the training load (volume and intensity) and regular training based on sound scientific principles led to better results, which aligns with the findings of (Hilal & Abdulridha, 2022) that scientifically based training programs directly contribute to the development of physical skills and abilities. This is also supported by the study by (Wisloff et al., 2004), which confirmed a strong correlation between maximum strength and improved speed and jumping performance in football players, indicating that the development of speed-strength is a natural consequence of increased neuromuscular adaptation.

The researcher believes the results stem from the effectiveness of the exercises used in the training program, which significantly contributed to this development. Changes of direction are primarily executed by applying a sudden braking force to shortly stabilize the foot, enabling the athlete to shift their body from one direction to another. Therefore, the leg muscles must possess a high level of strength to perform this stabilization, and it must be done in the shortest possible time to minimize the decrease in speed during the stabilization phase. This mechanistic explanation aligns with what (Al-Rubaie & Jaafar, 2020; Burgos Angulo et al., 2025; Ahmed et al., 2025) indicated regarding the importance of biomechanical variables, as well as with the (Sheppard & Young, 2006) model, which demonstrates that the agility of changing direction depends critically on technique, physical characteristics, and specifically eccentric strength in the leg muscles.

This resulted in a decrease in the total time spent on these tests in the post-test for the research sample. Researchers believe that modern training contributes to the development of rapid leg muscle strength, a finding corroborated by the study by (Wong et al., 2010) conducted on young players. This study indi-

cated that combining strength and speed training leads to a significant improvement in physical performance during matches (such as counter-attacks), which was reflected positively in the post-test scores of the research sample and demonstrated the effectiveness of these exercises.

The researcher believes that their findings will allow for a better understanding of the use of repetitive training methods and highlight their importance compared to other speed training techniques. The training program also aimed to enhance the player's ability to move the ball quickly over horizontal distances, aligning with the technique of touching the ball during sprints and achieving the required angles between body tilt and the target angle. This improved body tilt, resulting from running in this position, led to increased effectiveness of leg movements and better coordination with arm movements. This resulted in a speed similar to the player's off-the-ball speed, which is precisely what the researcher sought to achieve with minimal effort. The research sample members during their training and achieving the best attack as quickly as possible, because this game requires a high ability to respond quickly and unexpectedly.

Conclusions

- The training methods (repetition and circuit training) have a positive impact on developing certain kinetic, physical, and technical skills in football.
- The repetition training method is superior to the circuit and traditional methods in developing kinetic response, speed-strength, and fast-offensive and counter-offensive skills in football.

Recommendations

- Emphasize the use of the repetition and circuit training methods in developing other football skills.
- Conduct similar research in other sports.
- Football coaches should be trained, through practical courses, on how to apply training methods and their importance in developing kinetic and physical abilities and basic skills in various sports.

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