

## THE EFFECT OF COMPOUND EXERCISES ON SOME PHYSICAL AND SKILL ABILITIES IN DEVELOPING THE OFFENSIVE PERFORMANCE OF JUNIOR FOOTBALL PLAYERS

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**Annotation.** Football is the most enjoyable and attractive game to watch through the passion and continuous development in performance it offers. This rapid development is due to the training methods that develop and renew over the days. The current research aims to prepare complex exercises that target some of the physical and skill capabilities of football players, namely transitional speed, agility, and scoring. The research sample was represented by the players of the Al-Nahda Sports Club for the junior category for the 2024-2025 football season, numbering 34 players, aged between (15-17) years. The researcher used the experimental method of two equal experimental and control groups with pre-and post-tests to identify the differences between them and measure the rate of development for each group. The training method continued for (8 weeks) at a rate of three training units per week, for a total of (24) training units. The total intensity of the exercises ranged between (3.70% - 2.92%). The researcher used statistical methods that contained the computed and tabulated (t) value using (SPSS) software and the arithmetic mean and standard deviation. A researcher concluded through the current study that there is a positive effect of using complex exercises, as the results showed significant differences in the post-tests in favor of the experimental group. The researcher recommends the necessity of diversifying the use of exercises and

that they be comprehensive and complex, targeting multiple physical and skill capabilities.

**Keywords:** *compound exercises, physical abilities, skill abilities, offensive performance, football.*

**1.1. Introduction.** Soccer is one of the most popular sports worldwide and can be played anywhere without the need for specialized equipment. This type of game is among those where player performance and their capacity to provide exceptional levels have seen a notable improvement by covering greater distances and providing double efforts than previous players through energy expenditure levels and increasing speed, acceleration, and endurance, which led to providing high-level skill levels throughout the match and even the decisive extra halves, indicating the development of their physical, skill, psychological, and tactical abilities. There are several and varied exercises that helped in the development of this game, including compound exercises that are based on exercises similar to the player's performance during the match and are through compound exercises in which a number of players participate and contain more than one skill and implement them during the training unit. The junior category, aged (15-17) years, is one of the categories that must be taken care of and developed using various means to develop the player's physical and skill abilities in order to be a strong foundation for raising the level that helps him qualify for the advanced stage with merit. The utilization of challenging exercises that the author had created as an

additional training method an attempt to build certain physical attributes and fundamental football skills is what makes the research significant, which may contribute to improving some of the players' abilities, including physical and skill-related ones, in order to reach the best levels.

**1.2 Research problem.** Research and development attempts through various training methods in any game may contribute to the development of physical and skill qualities in players, which leads to the growth of the efficiency level during the match. By following up on the training units of junior clubs in Baghdad Governorate, the investigator observed deficiencies in several physical attributes and fundamental abilities in terms of playing speed and ball transfer among players. The researcher attributes this to several reasons, one of which is the reliance on exercises that target individual physical and skill qualities with little use of diversity in exercises and training methods. Therefore, he decided to study this problem by preparing complex exercises and applying them during the training units of Al-Nahda Sports Club for the junior category, hoping that they would contribute to developing some physical qualities and basic skills for players in the game of football.

**1.3. Research objectives**

- Preparing complex exercises to develop

some physical and skill qualities in football for young players aged (15-17) years.

- Identifying the effect of complex exercises in developing some physical and skill qualities in football for young players aged (15-17) years.

**1.4 Research hypothesis**

- Compound exercises have a positive effect on developing some physical and skill qualities in football for young players aged (15-17) years.

**2.1. Research Methodology.** The researcher chose the experimental method by designing two equivalent experimental and control groups that are appropriate for the objectives of the current study "because the method is the path leading to revealing the truth in various sciences, through a set of general rules in order to reach an acceptable and known result".<sup>(1)</sup>

The research community consisted of players from Baghdad clubs participating in the Junior Football League for the 2024-2025 sports season, numbering (13) teams, and the research sample was represented by Al-Nahda Club players, numbering (34) players, who were divided into two groups, control and experimental, by drawing lots and randomly. Homogeneity and equivalence were carried out for the two groups as shown in Table (1).

*Table (1), demonstrates homogeneity of age, weight, and height:*

Variables	Unit of Measure	Mean	Median	Standard Deviation	Coefficient of Skewness
Age	year	15.4	16	4.18	0.07
Mass	Kg	53	55	19.10	0.15
Height	cm	158	161	9.09	0.10

It is clear from Table (1) that the value of the skewness coefficient ranges between (0.07 - 0.15) and is limited to ( $\pm 3$ ). This in-

dicates that the sample is normally distributed, which indicates its homogeneity in the variables of age, mass, and length.

**Table (2).** displays the calculated (t) value, significance level, mean, and standard deviation for both control and experimental groups for the pre-tests:

Variables	Unit of Measurement	Group Experimental		Control Group		Calculated T-value	Tabular T-value	Significance Level
		m.	St.d	m.	St.d			
Transitional speed	Second	3.043	0.211	3.417	0.226	0.371	2.10	Non-mor
Scoring	degree	10.904	3.324	9.841	5.208	0.546		Non-mor
Agility	Second	4.118	0.533	4.327	0.326	0.970		Non-mor

At a degree of freedom (18) and a significance level of (0.05)

Table (2) shows that at an acceptable level of significance of (0.05) & a degree of freedom of (18), the computed (m) values were smaller than the tabular (m) value (2.10). This demonstrates the equivalency of the two study teams because the disparities in physical and skill capacities between them were not statistically significant.

**2.2. Research tests:**

**1 - Tran-sitional speed:** (30) m running test from a high start: <sup>(2)</sup>

- Test objective: Measuring transitional speed
- Tools used:
  - Defining the test area with three lines, one for the start, the second 10 m from the test area, and the last (30 m) for the finish.
  - Electronic stopwatch (2), whistle.
  - The time spent during the (30) m run is calculated.
- Performance method: The player starts from the starting line 10 m away until he reaches the designated test area, which is 30 m, so that the timer begins to calculate the time spent until he reaches the finish line.

**Recording method:** The time is calculated to the nearest (1/100) second, so that one attempt is given to each player.

**2 - Agility:** Running test between the markers for a distance of (20 m): <sup>(3)</sup>

- Tools used: measuring tape, (10) markers, stopwatch, whistle.
- Performance method: The player stands on the starting line, which is 2 m away from the first marker. The player starts after hearing

the whistle between the ten markers for a distance of (20) m. The distance between one marker and another is (2) m. The importance of the markers lies in performing the zigzag running movement that the player performs by crossing the markers.

- Recording technique: A timer is used to measure the amount of time elapsed between the player's beginning and the last marker. The timing is rounded to the nearest 1/100 second, and each player is only allowed one try.
- 3 - Scoring:** Scoring towards a goal divided into squares: <sup>(4)</sup>
  - Test objective: measuring the accuracy of shooting towards the goal.
  - Performance method: (5) Balls are positioned on the foul line, which is eighteen yards beyond the goal's line, with one yard among each ball. As long as the exam is taken while moving, the player receives scores in the regions designated by the test based on their significance and difficulties.
  - Scoring method: The number of shots that enter the designated goals from both sides is calculated. Each ball is calculated with the points specified for the calculated area, taking into account that it is zero if the ball leaves the goal lines and is computed to the bigger area if it contacts the tape following the outside goal boundaries. The points for each of the five balls are calculated as follows: (5 points to area No. 5, 4 points to area No. 4, 3 points to area No. 3, 2 points to area No. 2, 1 point to area No. 1, zero outside the goal boundaries).

**2.3. Field procedures:** The main experiment of the research was conducted by applying the training method prepared by the researcher by performing complex exercises in the form of groups during the training unit, each group containing (5-6) exercises throughout the training unit's major portion for the team into performing these exercises on the experimental group. Performing these exercises took (50-55) minutes. The training method continued for eight weeks, or twenty-four exercise units, at a pace that involved three exercise units each week. The investigator applied the exercises in an organized manner, containing specific intensities and repetitions.

The researcher also relied on giving the intensities in the form of a pyramid, where the first week begins with intensity and gradually increases to the third week, where it decreases in the fourth week, and so on in the weeks that follow. Rest periods were given between repetitions. After performing the exercises, they were proportional to the intensity of the work. The percentage of the total intensity of the exercises (degree of difficulty) was extracted from all training units based on the pulse rate resulting from performing each exercise and the maximum heart rate, in addition to the volume of the exercises. The total intensity of the exercises ranged between (2.92%-3.70%).

**3.1. presenting the control group's pre and post-test outcomes for physical and skill abilities.**

*Table (3). presents the statistical methods used for both the physical and ability abilities pre-and post-tests for the control group:*

Variables	Unit of Measurement	Pre-test		Post-test		Calculated T-value	Tabular T-value	Significance Level
		m.	St. d	m.	St. d			
Transitional speed	Second	3.543	0.218	3.377	0.222	4.079	2.24	moral
Scoring	degree	10.900	7.314	10.200	6.440	2.211		Non-moral
Agility	Second	4.129	0.576	4.001	0.552	2.192		Non-moral

**3.2 presenting the findings from the experiment's pre- and post-tests on their physical and technical abilities:**

*Table (4). statistical evaluations of the experimental group pre-and post-test results for physical attributes and fundamental competencies:*

Variables	Unit of Measurement	Pre-test		Post-test		Calculated T-value	Tabular T-value m.	Significance Level
		M.	St. d	M.	St. d			
Transitional speed	Second	3.497	0.326	3.442	0.294	2.696	2.24	Sig.
Scoring	degree	9.800	5.308	12.100	4.121	4.867		Sig.
Agility	Second	4.329	.308	4.286	.284	3.722		Sig.

**3.3 presenting the findings of the research and control groups' post-tests on their physical and skill capacities:**

**Table (5). Illustrates the statistical treatments for the post-tests of the physical and skill abilities of the experimental and control groups.**

Variables	Unit of Measurement	Pre-test		Post-test		Calculated T-value	Tabular T-value	Significance Level
		m.	St. D	m.	St. D			
Transitional speed	Second	3.377	0.222	3.442	0.294	0.556	2.10	Insig.
Agility	Second	4.001	0.552	4.286	0.284	1.450		Insig.
Scoring	degree	10.200	6.440	12.100	4.121	3.367		Sig.

At degree of freedom (18), significance level (0.05)

**3.4 Discussion.** Table (3) shows significant differences in the transitional speed of the control group in the pre-and post-tests. The researcher attributes the reason for this to the exercises given by the trainer. Transitional speed is one of the physical abilities in which the genetic factor plays a greater role and its development is slow compared to other physical abilities. "The diversity in training and the introduction of more than one skill in one exercise has contributed to the development of some physical qualities."<sup>(5)</sup>

Significant variations in the experimental group's pre- and post-test scores for transitional speed, agility, and scoring are displayed in Table (4). The study credits the cause for this to the influence of the complex workouts that comprised sprinting with the ball, leaping and others. The players trained on them in circumstances to those encountered during play, using the proper amount of time and repetitions along with work-appropriate rest intervals. Compound exercises are one type of workout that requires specific preparation. They should be tailored to the performance level of the players and serve both physical and skill-related objectives simultaneously, progressively raising in complexity over time.<sup>(6)</sup>

Table (5) shows the presence of non-significant differences in transitional speed and agility between the experimental and control groups in the post-tests. The researcher at-

tributes the reason for the non-significant differences to the similarity of the two groups in physical characteristics, as the control group underwent sports training by the team coach for the general preparation period and reached a good level in the physical abilities mentioned above.

The results of Table (5) also showed significant differences in scoring, which the researcher attributes to the fact that this development is due to the intensive use of this skill in exercises, which led to its development and reaching significance, "as performing complex exercises with the ball helps increase the player's sense of the ball and estimate the distance and timing for scoring, which helps in a high percentage of scoring".<sup>(7)</sup>

The development of physical abilities is moving towards building a player who is prepared to develop his basic skills easier and faster, as "basic physical abilities are what enable the player to perform the various motor skills required by the game he exercises correctly, as they constitute the cornerstone of the player's access to high sports levels."<sup>(8)</sup> These are necessary abilities for the player and determine the importance of one or more abilities than other physical abilities according to the nature and requirements of the game practiced, It should be borne in mind that there are close correlations between different physical abilities".<sup>(9)</sup>

"The performance of some technical skills may require a high degree of acquisition of a physical attribute such as strength, flexi-

bility or speed, and here the coach must work to prepare the athlete and give him the required degree of this physical attribute that enables him in the end to perform the required technical skill with a high degree of proficiency".<sup>(10)</sup> The interdependence and integration of abilities is a reason for improving performance in general and even contributes to the development of common abilities, especially since some physical qualities are a composite of two or more abilities, such as strength characterized by speed, which is shared in the composition of the capabilities of force and speed, which in turn is reflected in the level of skill performance. There are two types of explosive force training, namely weight force training and explosive force training by plyometric jump".<sup>(11)</sup>

"The diversity in the use of training methods and subjecting them to the scientific aspect contributes to the development of the training process and allows the principle of adaptation to work clearly at the physical and skill levels of athletes".<sup>(12)</sup> Also, "sports training at a single pace does not lead to the required adaptations despite the increase used in the degree of load and ultimately leads to stability in level".<sup>(13)</sup> To achieve the required adaptation must change the training loads through the manipulation of the components of intensity, size and intensity and change the methods of training to serve the objectives of training also take into account the diversity in the exercises to be performed to avoid boredom that accompanies the implementation as a result of repeated exercises similar and preferably include training units means of training assistance serve their objectives, "The weight of the coach measured by his training and so as not to get bored players as a result of the use of traditional exercises known to some it must all A coach to arm himself with a variety of ammunition that enriches his players, their enthusiasm and continuity that benefits them physically and skillfully".<sup>(14)</sup>

The use of similar exercises that simulate different playing situations has played a helpful role in the development of many physical and skill qualities, "as the greater the in-

terest in providing exercises similar to the competition situation, the more players can be taught the correct skill".<sup>(15)</sup>

**4.1. Conclusion.** In the experimental group, the compound workouts that the author produced benefitted the development of transitional speed, agility, and scoring.

#### **5.1 Recommendations.**

- 1- Coaches of young players between the ages of 15 and 17 should perform these workouts, according to the study, since they have a favorable effect on players' skill levels plus physical capacities.
- 2- Use a variety of exercises to add fun and excitement to the players' souls.
- 3- Conduct similar research on other age groups.
- 4- Conduct similar research on different physical and skill abilities.

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## YENİYETMƏ FUTBOLÇULARIN HÜCUM PERFORMANSININ İNKİŞAFINDA MÜRƏKKƏB MƏŞQLƏRİN BƏZİ FİZİKİ VƏ BACARIQ QABİLİYYƏTLƏRİNƏ TƏSİRİ

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**Аннотасија.** Футбол тәклиф етдији перформансда ехтирас вә давамлі инкiшaф yolu ilə изләмәк үчүн ән хош вә сәлбедичи ойундур. Бу сүрәтлі инкiшaф гүн әрзиндә инкiшaф едән вә yenilәнән тәлим методларі ilə бағлидир. Hazırkı тәдқиқатın мәqsәди футболчuların бәзи физики вә bacariq imkanlarını, yәni keçid сүрәти, çeviklik вә qol vurmağı hәdәflәyән kompleks mәşqlәр hazırlamaqdır. Тәдқиқат нүмунәси 2024-2025-ci il футбол mövsümü үчүн yeniyetmәlәр kateqoriyası üzrә Ən-Nәhdә İdman Klubunun oyunçuları (15-17) yaş arasında olan 34 oyunçu ilə tәmsil olunub. Тәдқиқатçı iki бәрәбәр eksperimental вә nəzarət qrupunun eksperimental üsulundan әvvәl вә sonrakı testlәрлә birlikdә aralarındaki fәrqlәri müәyyән еtmәk вә hәр qrup үчүн инкiшaф сүрәтини ölçmәk үчүн istifadə еtmіşdir. Тәлим методу (8 hәftә) hәftәдә үç tәlim vahidi, cәmi (24) tәlim vahidi үчүн da-

vam еtdi. Тәlimlәрin ümumi intensivliyi (3,70% - 2,92%) arasında dәyişdi. Тәдқиқатçı (SPSS) proqram tәminatından istifadə еdәрәk hesablanmış вә сәdvәllәşdirilmiş (t) dәyәrini вә arifmetik orta вә standart kәnarlaşmanı еhtiva едән statistik metodlardan istifadə еtmіşdir. Тәдқиқатçı hazırkı araşdırma nəticәsində belә nəticәyә gәldi ki, kompleks mәşqlәrdән istifadənin müsbәt тәsiri var, çünki nəticәләр eksperimental qrupun xeyrinә post-testlәrdә әhәmiyyәtli fәrqlәр göstәrdi. Тәдқиқатçı mәşqlәrdән istifadənin şaxәlәndirilmәsinin zәruriliyini вә onların hәrtәrәfli вә mürәkkәb olmasını, çoxsaylı fiziki вә bacariq imkanlarını hәdәf almasını tövsiyә edir.

**Аçар sözlәр:** qarışıq mәşqlәр, fiziki qabiliyyәtlәр, bacariq qabiliyyәtlәri, hücum performansı, futbol.

## ВЛИЯНИЕ СОЧЕТАННЫХ УПРАЖНЕНИЙ НА НЕКОТОРЫЕ ФИЗИЧЕСКИЕ И ТЕХНИЧЕСКИЕ СПОСОБНОСТИ ПРИ РАЗВИТИИ НАПАДАЮЩИХ ХАРАКТЕРИСТИК ЮНЫХ ФУТБОЛИСТОВ

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**Аннотация.** Футбол — самая приятная и привлекательная игра, которую можно наблюдать благодаря страсти и постоянному развитию результативности, которую она предлагает. Такое быстрое развитие обусловлено методами обучения,

которые развиваются и обновляются с течением времени. Текущее исследование направлено на подготовку комплексных упражнений, нацеленных на некоторые физические и навыки футболистов, а именно на скорость перехода, ловкость и



результативность. Выборку исследования составили игроки спортивного клуба «Аль-Нахда» юношеской категории футбольного сезона 2024-2025 годов в количестве 34 игроков в возрасте (15-17) лет. Исследователь использовал экспериментальный метод двух равных экспериментальной и контрольной групп с пре-и-посттестами для выявления различий между ними и измерения скорости развития для каждой группы. Метод обучения продолжался в течение (8 недель) со скоростью три учебных занятия в неделю, всего (24) учебных занятий. Общая интенсивность упражнений колебалась в пределах (3,70% - 2,92%). Исследователь использовал статистические методы, которые содержали вычисленное и сведенное в таблицу значе-

ние (t) с использованием программного обеспечения (SPSS), а также среднее арифметическое и стандартное отклонение. В ходе текущего исследования исследователь пришел к выводу, что существует положительный эффект от использования комплексных упражнений, поскольку результаты показали значительные различия в пост-тестах в пользу экспериментальной группы. Исследователь рекомендует диверсифицировать использование упражнений и сделать их комплексными и комплексными, нацеленными на разнообразные физические и навыки.

**Аннотация:** *сложные упражнения, физические способности, навыки, атакующие действия, футбол.*