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Training overlap and its impact to developing the special endurance for young football players

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Abstract

The importance of the research lies in adopting the method of overlapping training to develop special endurance as one of the most important special requirements for soccer players, because raising the level of special endurance, which is mainly linked to the degree of functional adaptation, is reflected in improving the level of physical, skill, tactical and psychological achievement effectively throughout the time of the match, and this has an impact on improving the level of achievement for the player and the team alike. As for the research problem, it was represented in the low level of special endurance for the players, which appears in the clear decline in the level of performance, especially in the last third of the match, due to the weak level of special endurance for the players, which leads to slow recovery and early fatigue, lack of concentration and low level of overall performance (physical, technical, tactical, and psychological), which appears through random play, scattering of balls, frequent tackles, slow defensive and offensive activities, as well as the inability to implement modern tactics, which depend heavily on the application of the concept of comprehensiveness in the performance of tactical duties. While the objectives of the research were to develop a training curriculum in the style of overlapping training to develop the special endurance of football players, as well as to identify the impact of the training curriculum in developing the special endurance of football players. Wasit province, which numbered (18) players. The most important conclusions were: The development that occurred for the research group in the level of endurance as a result of the special effect of the vocabulary of the training curriculum in the overlap style. The researchers also recommend the need to adopt the training overlap method and the components of the training load by the trainers when training levels corresponding to the level of the research sample.

Keywords: Training overlap, special endurance, training method.

1. Introduction

The development of global sports achievement in recent decades did not come randomly, but rather was an inevitable result of the use of scientific research methods and proper planning, by employing the foundations and principles of modern sciences such as the science of training, physiology, statistics, biomechanics...etc.

Football was and still is the first popular game in the world, and the modern requirements in this game have created a great need to prepare the players with high physical numbers, especially since the changes in modern football achievement are linked to the acceleration of defensive and offensive activities with a high level of strength, as well as a high level of performance skill players, and the adoption of the total ball method (comprehensiveness in the performance of tactical duties) and the player's occupation of more than one position in the team, so we see the defender actively contributing to the attack and the striker retreating to defend his team's goal, despite the player's endurance of this high effort; He must maintain his physical fitness throughout the match (90-120) minutes. Here, the importance of special endurance associated with the degree of functional adaptation appears, as one of the most important factors affecting the level of performance of the players during the two halves of the match, which was mentioned by (Al-Rubaie and Al-Mawla, 1988: 184) ^[7] "The player with special endurance below the level faces the largest oxygen debt, which leads to slow The state of hospitalization and early fatigue. The importance of this research lies in the importance of special endurance and the importance of striving to find the best ways and methods to develop it as one of the most important special requirements for football players. Players who have a high level of special endurance are more able to implement what is required of them during the match and give their coach more opportunities to choose the type of plan and method of play, because raising the level of special endurance.

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Which is mainly linked to the degree of functional adaptation, is reflected in improving the level of physical, skill, tactical and psychological achievement effectively throughout the time of the match, and this has an impact on improving the level of achievement for the player and the team alike.

1.2 Research problem

The problem of the research is represented in the low level of endurance of the players, which is one of the obstacles that the Iraqi football suffers from and that impedes the course of its development. The researchers noticed that the majority of Iraqi football teams, regardless of their names, suffer from a clear decline in the level of performance, especially in the last third of the match. Because of the poor level of endurance of the players, which leads to a slow state of recovery, early fatigue, lack of concentration, and a low level of overall performance (physical, technical, tactical, and psychological), which appears through random play, scattering of balls, frequent tackles, and slow defensive and offensive activities. Because of the poor level of endurance of the players, which leads to a slow state of recovery, early fatigue, lack of concentration, and a low level of overall performance (physical, technical, tactical, and psychological), which appears through random play, scattering of balls, frequent tackles, and slow defensive and offensive activities. Therefore, the researchers decided to adopt the training overlap process because it contains most of what the scholars agreed upon in their different schools, and to embody this by developing a training curriculum in order to achieve a high level of functional competence necessary for the special endurance characteristic, whose weak level is one of the main factors in the low level of spherical achievement. .

1.3 Research objectives

1. Developing a training curriculum using the overlap training method to develop the special endurance of football players.
2. Identifying the impact of the training curriculum on developing the special endurance of football players.

1.4 Research Hypotheses

In the light of the objectives of the research, the researchers assume that the vocabulary of the training curriculum using the method of overlapping training has a positive impact on developing the special endurance of soccer players.

1.5 Research fields

Human field: Al-Kout Sports Club football players.

Time field: 08/01/2023 to 17/03/2023.

Spatial field: Al-Kout Olympic Club Stadium.

1.6 Search terms

Training overlap: (Meyners, 2000: 214) defined it as “a diversification in the methods and methods and the organization of training in the training unit by using a variety of exercises in relation to those methods, which leads to an exchange of the effect of the load on all muscle groups, the heart, blood circulation, the respiratory system and the organs.

2. Research Methodology and Field Procedures

2.1 Research Methodology

The researchers used the experimental approach with an equal group with a pre and post-test because it is suitable for the research requirements and for being the appropriate way to solve the problem.

2.2 Research Sample

The research sample consisting of (18) players representing the players of Al-Kout Football Club was selected, and the members of the research sample were intentionally chosen to provide all the requirements for conducting the research experiment. 3 goalkeepers and three players were excluded due to the large number of absences, leaving (12) players.

2.3 Study Design

The researchers adopted the design (equivalent experimental), which is one of the types of experimental designs. The research included the following variables.

The independent variable

The training intervention that represents the experimental variable.

The dependent variable: It includes the physical variables represented by the special endurance elements, which are:

1. Speed endurance.
2. Strength endurance.
3. Performance endurance.

2.4 Homogeneity of the sample

One of the important things that the researchers must follow is adjusting the variables and returning the differences to the experimental factor, and for the purpose of verifying the homogeneity of the study sample, the researchers conducted the homogenization process.

Table 1: Shows the homogeneity of the research group in some variables (morphological and physical).

N	Variables	Measuring unit	Mean	Std. deviation	Mode	Skew ness
1	Length	Cm	170.7	2.81	169.6	1.17
2	Weight	Kg	66.3	2.52	65.5	0.95
3	Training age	Year	2.4	1.6	3	0.25-
4	Bounce running 180	M /second	36.56	0.96	36.28	0.87
5	Sit-jump up for 90 seconds	Repetition	37.5	1.54	37	0.97
6	Rolling 30m and shooting five times continuously	Second	60.54	0.83	60.37	0.61

2.5 Means and tools for collecting information

The researchers used the following methods to collect information for their research:-

1. Questionnaire 2
2. Personal interviews
3. The support team.
4. Tests.
5. Data registration form number 2
6. Arabic and foreign sources and references.
7. Exploratory experiments.

8. Statistical means.

2.5 The researchers also adopted the following devices and tools to carry out their research:

1. Electronic manual stopwatch.
2. Measuring tape (linen) 30 meters long.
3. Medical balls weighing (2, 2.5, 3) kg.
4. Signs number (12).
5. (8) Barriers with a height of (76) cm.
6. Terraces number (3).
7. Weight machines with iron tools and tires of different weights.
8. Football number (10).
9. Whistle.
10. Football field.

2.6 Choosing the variables and tests used

2.6.1 Determine the tests concerned with measuring the physical and functional variables

In light of the results of the survey form through which the variables under study were identified, and after the researchers examined many sources and references concerned with physical tests, a number of tests were selected for measuring the variables concerned with the research and put them in a special form to solicit the opinions of experts about the nomination of the most important of these tests, which are supposed to be more valid in measuring the physical variables in question. The researchers relied when selecting the appropriate tests on the relative importance of 90%.

Table 2: Shows the relative importance of expert agreement on the preference of candidate tests for measuring physical and functional variables

N	Variables	Candidate tests	Relative importance	Preference
1	Speed endurance	Run 200 m	%72	
		The apostate ran 180m	% 84	✓
2	Strength endurance	Sitting - getting up (dubny) until exhaustion	% 68	
		Sit up jump (90) seconds	% 91	✓
3	Performance endurance	Middle circuit test	%35	
		Dribblin 30m and shooting five times continuously	% 95	✓

2.6.2 Special Endurance Tests

First test: Running 180m from a standing position (Zuhair al-Khashab and others, 1999: 134) ^[4].

Purpose of the test: to measure speed tolerance.

Second test: Sitting-jumping up (Thamer Mohsen and others, 1991: 136) ^[2] Purpose of the test: to measure force tolerance.

Third test: Rolling (30) meters and shooting - five times and continuously (Al-Rubaie and Al-Mawla, 1988: 164) ^[7]

Purpose of the test: To measure performance stress.

2.7 Exploratory Experiments

The first exploratory experiment was conducted on Monday corresponding to (01/02/2023) on a sample of (12) players representing the Al-Kout Club football team, who were chosen randomly. The purpose of the experiment was to identify the following:

1. The validity of some of the exercises used in terms of practical application.
2. The validity of the tools used in the exercises.
3. The time taken when performing the exercises.
4. Identifying the efficiency of the assistant staff in implementing the training curriculum.

The researchers also conducted a second exploratory experiment on Wednesday corresponding to (04/01/2023), the purpose of which was:

1. Identify the negatives that may appear when conducting the tests for the purpose of overcoming them.
2. Applying some tests and measurements.
3. Training on how to register.
4. Appropriateness of the devices used in the tests and measurements

2.8 Steps to conduct the research

2.8.1 Pre-test of the research sample

Pre-tests were conducted for the research sample on Friday

(06/01/2023) at four o'clock in the afternoon, and the tests were conducted in the two stadiums of Al-Kut Club for the research sample, and the researchers fixed the conditions for the tests in terms of place, time, method of testing, and the work team in order to achieve the same or similar conditions as possible when conducting post-tests for the research sample.

2.8.2 The overlapping training curriculum

The researchers prepared a training curriculum in an overlap style in the preparatory period for the players of the Al-Kout football team, which had a duration of (10) weeks. In addition to the opinions of experts and specialists in football and the science of sports training - to benefit from their opinions, scientific and practical experiences, and their guidance in order to produce the training curriculum in its final form.

The curriculum included (40) training units at a rate of (4) training units per week, as (Cooper, 1998: 39) ^[10] believes that "ensuring the effect of training when practicing sports activity (4) times a week", and the training units were distributed on Sundays - Monday - Wednesday - Friday, and (Al-Lami, 2004: 342) emphasized that "scientific and field evidence confirms that one training unit per day and two consecutive days followed by a day of rest is the best in the physical adaptation programs." The time of the training unit was (90) minutes Divided into three sections:

1. Preparatory section.
2. The main section.
3. The final section.

The time of the preparatory section of the training curriculum was (720) minutes, divided into (160) minutes for the organizational aspect, at a rate of (4.45%), and (200) minutes for the general warm-up, at a rate of (5.55%), and the time for the special warm-up was (360) minutes, at a rate of (10%). As for the total time of the main section of the training curriculum, it amounted to (2680) minutes,

which included physical preparation with a time of (1280) minutes, with a rate of (35.56%). The skillful preparation amounted to (920) minutes, at the rate of (25.55%), the tactical preparation, which amounted to (320) minutes, at the rate of (8.89%), and the theoretical lectures for the development of psychological, educational and mental preparation, with a time of (160) minutes, at a rate of (4.45%). As for the time of the final section of the training curriculum, it reached (200) minutes, with a rate of (5.55%). The preparatory section of the training curriculum included general and specific exercises commensurate with the training objectives. As for the main section, it contained general physical exercises, special exercises, and compound exercises (mixed), in which periodic exercises are linked with non-cyclic exercises (aerobic and non-aerobic) to develop strength endurance, speed endurance, and performance endurance, with exercises to develop the skill and planning aspects, as well as the theoretical aspect to develop psychological, educational and mental preparation. By explaining the workflow of the exercises and their requirements in terms of intensity, volume and comfort so that they are related to the goals of the exercise. The researchers used various training methods and methods in an overlapping manner, taking into account the relationship between them, according to the specificity of each training method or method, in order to develop the

level of endurance and raise the level of physical adaptation of the players.

During the preparation of the training units, the researchers took into account the following:

1. The specified time for the training unit.
2. The intensity of the training unit, where the maximum pulse rate method was adopted to calculate the severity of the load (Mufti Ibrahim Hammad, 1998: 43) ^[9].
3. The number of repetitions for each exercise in the training unit.
4. The number of training units per week.
5. Rest periods between one repetition and another.
6. Gradient in difficulty from one exercise to another.

The implementation of the training curriculum began on Sunday 8/1/2023 and continued until Friday 17/3/2023. The curriculum included two phases:

1. The first stage for a period of (6) weeks, which included (24) training units, as the total time for it reached (2160) minutes, which represented the general preparation.
2. The second stage, for a period of (4) weeks, included (16) training units, as the total time for it reached (1440) minutes, which represented the special preparation.

Table 3: Shows the division of time and percentage over the training sections during the period of application of the training curriculum.

Training section	The time in minutes during the training unit	Time in minutes during a week (4) units	Time in minutes during (10) weeks (40) units	Percentage
Preparatory section				
Organizational side	4	16	160	%4.45
General warm-up	5	20	200	%5.55
Special warm up	9	36	360	%10
Main section				
physical preparation	32	128	1280	%35.56
Skill preparation	23	92	920	%25.55
Planing preparation	8	32	320	%8.89
Theoretical side	4	16	160	%4.45
Final section	5	20	200	%5.55
Total	90	360	3600	%100

2.8.3 Post-tests for the research sample

The post-tests were conducted on Sunday 19/03/2023 at 4:00 pm for the research group and at the same times as the tests for the control group, and the same pre-test conditions were met as much as possible.

2.9 Statistical means: The researchers used the statistical bag (SPSS).

3. Presentation, analysis and discussion of the results

The researchers presented the results of the statistical

treatments of the research data in tabular form and interpreted the results of the tests for all the study variables for the research sample in the pre and post-tests to know the reality of the differences and to indicate the effect of the independent variable (overlap method training), according to the accurate scientific perspective in order to achieve the research goals and hypotheses and to identify the level of the variables Affiliate (special endurance) of the research sample, and what that level should be in the light of the objectives in the training curriculum for which it was developed.

3.1 Presentation the results of the tests for the research group in the pre and post tests

Table 4: Shows the means, standard deviations, and the calculated and tabulated t-value for the pre and post-tests of the experimental group.

N	Tests	Pre-test		Post-test		Calculated T Value	Sig Level	Sig Type
		Mean	Std. deviation	Mean	Std. deviation			
1	Rebound run 180 m / s	36.3	0.87	34.42	0.66	8.41	0.000	Sig
2	Sitting - jumping up / the number of times	37	1.32	44.9	0.89	7.14	0.001	Sig
3	Dribbling 30m and shooting five times continuously / sec	60.4	0.94	58.01	0.36	9.67	0.000	Sig

4. Discussion

By looking at Table (4), we note that the research sample has made progress in the post-measurement, which confirms the existence of a significant significant difference in favor of the post-test of the experimental group. The multifaceted effect by taking into account the use of speed training in different forms and for a variety of distances, as this helped in improving the physiological ability of the players, improving general compatibility, and assisting in the process of adaptation to high physical requirements (Amrullah Ahmed Al-Bassati, 1998: 161) ^[1]. And also through the scientific method followed by the researchers, which aims to ration the components of the training load in terms of intensity, repetition, and comfort to the extent that works to develop the characteristic of carrying the appropriate speed, in addition to developing the level of agility among the members of the research group, which had an impact in reducing the recoil time (change of direction) while running in this test as one of the factors of speed and balance during a change of direction and rapid responses to changing situations (Raisan Khraibet, 1988: p. 278) ^[3]. The researchers attribute this development to the effectiveness of the training curriculum in the overlap method, which is characterized by comprehensiveness, as the use of various and different training methods, methods and means in an overlapping manner gave various results and different and multifaceted effects. This was reflected in the development of various physical attributes, in addition to the focus adopted by the researchers in the training curriculum on the characteristics of endurance of strength and endurance of speed, as well as the development that occurred in the technique as a result of repeated performance of exercises related to the development of skills in addition to agility, which led to the improvement of the results of this test among members of a group The research is the result of the association of the ability to perform skills with agility (Mohammed Hassan Allawi, 2004: 176) ^[8]. The strength endurance element was the most affected element of the special table by the training intervention method, while the development values for speed endurance were less, and the researchers attribute these results to what experts and specialists confirmed that the speed development values remain behind compared to the development of special endurance in general, and it is normal That the values of the ability to use force during the load rise in a balanced manner when the athletic level grows, and it is not a coincidence that the values of the strength ability rise when the level ability rises. In football, there is a great progress in the level of endurance, then strength comes, and after that the speed grows, and this is confirmed by some of them (Qasim Hassan, 1990: 205) ^[6] that “adaptation to raise achievement takes place based on speed less than in endurance training, so the least success of training appears In general, in speed training.” And the researchers believe that this analysis allows us to say that the development of the strength endurance level came as a result of the rapid development of the endurance and strength characteristics, and the weak rate of speed endurance development was due to the delay in the speed development compared to the development of the endurance and strength characteristics.

5. Conclusions and recommendations

5.1 Conclusions

By presenting and discussing the results of the pre and post tests for the control and experimental groups, the researchers reached the following conclusions:

1. There are significant differences between the pre and post tests and in favor of the post test for the research group in the level of all special endurance elements (speed endurance - strength endurance - performance endurance), and all functional variables - under study - except for the systolic blood pressure index after effort and diastolic blood pressure before the effort.
2. Strength endurance and the physical efficiency index are the most affected elements of endurance by the training curriculum (based on the overlap in training) in terms of the level of development.
3. The development that occurred for the research group in the level of special endurance as a result of the special effective action of the vocabulary of the training curriculum in the overlap style.

5.2 Recommendations

In light of the research results, the researchers recommend the following:

1. Adopting the training overlap method and the components of the training load that was applied during the implementation of the training curriculum when training levels corresponding to the level of the research sample.
2. The need for coaches (especially for youth teams) to develop the level of special endurance and its basic components (endurance of speed, endurance of strength, endurance of performance) while raising the level of efficiency of the functional devices (respiratory - muscular - nervous cycle) of the players in order to keep up with the modern physical, skill and tactical requirements.
3. Conducting similar research to identify the extent of the correlation between the elements of special endurance and the most important functional variables for football players.

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Appendix

Representing the training curriculum for the research group (overlapping style)

General preparation - the first week

Day	Date	Content of the training unit	Subject objectives	Intensity
Sunday	1/08	Warm-up, repetition training, interval training, flexibility exercises	Developing basic skills, training with plenty of oxygen, developing flexibility	45%
Monday	1/09	Warm-up, circuit training, physical training, technique, mini-games, play exercise	Developing strength while developing dribbling and scoring skills, developing reaction speed.	50%
Wednesday	1/11	Warm-up, fartlek training, physical-technical training, various playing exercises	Develop transitional speed and agility while developing suppression, dribbling, handling, and scoring	55%
Friday	13/1	Warm-up, general endurance + flexibility circuit training, repetitive training, various play exercises	Increasing the efficiency of vital systems with the development of the range of motion of the joints, the development of basic skills	45%

Second week

Day	Date	Content of the training unit	Subject objectives	Intensity
Sunday	1/15	Warm-up, repetitive training, circular training, small ball games, play exercise	Developing strength for different muscle groups + skill and agility	50%
Monday	1/16	Warm-up, low-intensity interval training, various playing exercises, continuous training	Developing ball acceleration and coordination, developing physical attributes and basic skills, developing general endurance	55%
Wednesday	1/18	Warm-up, repetition training, circuit training, mini-games, flexibility exercises	Develop reaction speed and transitional speed with agility, linking physical attributes with basic skills	60%
Friday	1/20	Warm-up, technical physical training, playing exercises, low interval training, continuous training	Developing basic physical characteristics, increasing the efficiency of (circulatory, respiratory, and muscular) systems.	50%

Third week

Day	Date	Content of the training unit	Subject objectives	Intensity
Sunday	1/22	Warm-up, repetition training, circuit training, various playing exercises	Develop endurance, strength and agility + shooting speed, harmony within the field	55%
Monday	1/23	Warm-up, fartlek training, low-intensity interval training, theoretical-practical preparation, play exercise	Develop general endurance and speed + develop dribbling and shooting accuracy, fixing the basic duties of each position	60%
Wednesday	1/25	Warm-up, high-intensity interval training, circuit training, various playing exercises	Developing endurance, speed and flexibility while developing some basic skills, carrying out duties for each position within the field	65%
Friday	1/27	Warm-up, technical physical training, playing exercises with approximate goals, continuous training	Development of general physical attributes + support and defensive coverage, development of general endurance	55 %

Fourth week

Day	Date	Content of the training unit	Subject objectives	Intensity
Sunday	1/29	Warm-up, circuit training, various playing exercises, low-intensity interval training	Develop general endurance and flexibility, handling accuracy and correct space occupancy, receiving the ball from movement, dribbling, scoring	45%
Monday	1/30	Warm-up, circuit training, repetition training, target play exercises	Developing strength and agility + counter handling and scoring, support and defensive coverage	50%
Wednesday	2/1	Warm-up, low-intensity interval training, repetitive training, and various playing exercises	Developing acceleration and controlling high balls during an effective attack, developing reaction speed, developing special physical and motor qualities	55%
Friday	2/3	Warm-up, physical-technical training, fartlek training, different playing exercises, theoretical preparation	Developing strength and focus + handling and shooting accuracy, rolling with a change of speed, building attacks through the wings	45%