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The effect of fartlek exercises in the ascending style on some physical and motor abilities and technical skill performance in football for the ages (16-18)

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Abstract

Football is one of the most popular games in the world that contains many variables to study with the aim of developing them. Therefore, the research problem was: Do fartlek exercises in the ascending style affect some of the physical and motor abilities studied and basic skills in football for young players? The most important objectives were to identify the effect of fartlek exercises in the ascending style on some physical and motor abilities and technical skill performance in football for young players. The most important thing that the researcher assumed was that there were statistically significant differences in the results of the post-tests for the experimental and control groups in skill performance in football in favor of the experimental group. The research method was experimental using the method of two equivalent samples, experimental and control. The research community was Al-Samawa football club players. A deliberate sample of 24 players was taken. After conducting the exploratory experiment and verifying the scientific weight of the test, the researcher conducted the pre-test and then proceeded to conduct the experiment and then conducted the post-test for the research variables. After that, he reached results and thus obtained conclusions, the most important of which were that significant differences appeared between the pre- and post-tests in favor of the post-test for the experimental and control groups in physical and motor abilities and the level of skill performance in football. The most important recommendations were the need for coaches to pay attention to the youth category by developing their physical and motor abilities to coincide with developing the level of skill performance among players in order to keep pace with the modern physical, skill and tactical requirements of football.

Keywords: Players, performance, requirements

Introduction

The great development witnessed by the world in the field of sports has led to the development of sports levels and the achievement of accomplishments. These accomplishments did not come out of nowhere, but were achieved thanks to researchers employing sound scientific planning to serve the achievement in these events. Football is one of the prominent sports events that has received increasing attention from various countries and at all levels. Such attention has made researchers always seek to develop the game by raising the level of the skill aspect of the players. Exercises and special training using different training methods and tools are important matters that must be taken care of by manipulating the components of load, intensity, volume and comfort, such as increasing or shortening the playing areas in a manner that is consistent with the type of exercise to reach the ideal performance in all physical, motor and technical aspects.

Research Problem

The efforts made in the field of sports training as a result of various studies and research have achieved development in the game of football, however, there are still existing problems related to the training process that require scientific solutions. Through field follow-up of youth football players' training, the researcher noticed that there is a weakness in the level of skill performance, which affects the player's level and leads to poor results. Therefore, the researcher sought through his research to answer the following question: Do fartlek exercises in the ascending style affect some of the physical and motor abilities studied and the basic

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skills in football for young players? In order to find positive points and generalize them and avoid negative matters to reach the ideal performance of football-specific skills.

Research objectives

1. Identify the reality of the physical and motor abilities and skill performance studied in football among the individuals in the research sample.
2. Identify the effect of fartlek exercises in the ascending style on some of the physical and motor abilities and skill performance in football for young players.

Research hypotheses

1. There are statistically significant differences between the results of the pre- and post-tests of the experimental and control groups in football skill performance in favor of the experimental group.
2. There are statistically significant differences in the results of the post-tests of the experimental and control groups in football skill performance in favor of the experimental group.

Research areas

- Human field: Al-Samawa football club players aged (16-18) years for the sports season (2022-2023)
- Time field: For the period from 1/29/2023 to 4/15/2023
- Spatial field: Al-Samawa football club stadium.

Research methodology and field procedures

Research methodology

The experimental method was used in the style of the two equivalent control and experimental groups to suit the nature of the problem to be solved to achieve the research objectives and hypotheses.

Research community and sample

The research community was represented by football players aged (16-18) years in Al-Samawa Football Club, numbering 34 players, while the research sample was chosen intentionally, represented by Al-Samawa Sports Club for Youth Football players, numbering (28) players. Goalkeepers were excluded, numbering (2), and players were excluded (2) due to injury. Thus, the number of players on whom the main experiment was conducted became (24) players, representing a percentage of (70.58%), and (8) players were chosen from outside the sample for the purpose of conducting exploratory experiments. The sample was divided into two equal groups randomly, one of which was experimental, numbering (12) players, who used special exercises in different areas, and the other: control, numbering (12) players, who used the curriculum followed by the coach.

Sample homogeneity

In order to avoid factors that affect the results of the experiment and attribute the differences to the experimental factor, the sample homogeneity was performed in the variables of height, weight and age. The results showed that the research sample was homogeneous, as all the calculated values of the skewness coefficient were close to zero and distributed moderately, as Table (1) illustrates.

Table 1: Shows the sample homogeneity in the variables of height, weight and age

Significance	Coefficient of skewness	Standard deviation	Arithmetic mean	Unit of measure	Variables	No
Random	0.58	6.52	172.9	poison	Height	1
Random	0.14	5.17	70.85	kg	The weight	2
Random	0.77	0.52	18.4	Year	The age	3

Equivalence of the two research groups

In order to start with one starting point, equivalence was carried out for the research sample before starting the main experiment, taking into account controlling all the variables

subject to the study and trying to reduce the differences between the sample members to the lowest possible level in order to ensure one starting point, and Table (2) shows that.

Table 2: Shows the equivalence of the research sample in the pre-test of skill performance

Statistical significance	t tabular	t calculated	Empiricism		The officer		Search variables	No
			A	S	A	Q-		
Non-moral	1,717	1.66	1.79	1.40	1.55	1.44	explosive power	1
Non-moral		1.25	1.45	4.28	1.56	4.29	top gear	2
Non-moral		1.23	0.55	11.29	1.2	11.5	Fitness	3
Non-moral		1,008	1.70	35,36	3.62	36.57	Skill performance	4

Significance level (0.05), and degree of freedom (22) Table (2) indicates that there is no significant difference in the research variables, which means that the two groups are equivalent, noting that the equivalence was achieved through pre-tests.

Devices, tools and means of collecting information

Devices and tools

Medical ball weighing (3 kg) Chinese-made * Medical scale for measuring height and weight, made in China. * Stopwatches, number (2) Sewan type, made in Taiwan. * Video camera, type Sony, made in Japan. * Computer, type Lenovo, made in China. * Legal footballs, number (15). * Measuring tape. * Indicators + obstacles + flags. * Football

field. * Whistle. * Bench. * Obstacles

Methods of collecting information

- Arab and foreign sources.
- Tests and measurement.
- Observation and experimentation.
- International Information Network Internet

Experimental Experiment

Before conducting the main experiment, it was necessary to conduct an exploratory experiment on a small sample of the research community, the purpose of which was to select the research methods and tools. The researchers conducted an exploratory experiment on 2/17/2023 on a sample of (8) youth

players who are outside the research sample at exactly (3:00) in the afternoon. The purpose of which was to: - Identify the obstacles facing researchers during the main experiment - Ensure the validity of the devices used - Identify the time for conducting each test as well as the total time for the tests - Ensure the adequacy of the auxiliary work teams: Through the exploratory experiment, the following was concluded: - The suitability of the tests for the research sample - The suitability of the sequence of tests according to the opinions of experts - The time taken by the experiment.

Scientific foundations of the test: In order to verify the scientific foundations in the exploratory experiment, it was necessary to extract the validity, reliability and objectivity of the variables studied.

Table 4: Shows the stability, reliability and objectivity coefficients for the skill performance test

Objectivity	Reliability coefficient	Stability coefficient	Test
0.91	0.94	0.88	explosive power
0.92	0.92	0.85	top gear
0.94	0.90	0.81	Fitness
0.94	0.93	0.87	Skill performa

Honesty: The researcher used self-honesty with the square root of the stability coefficient and it became clear that all the honesty coefficients were high.

Reliability: The researcher used the experiment method and repeated it in a period of less than seven days, as it was done on 2/17/2023 and repeated on 2/22/2023, and all the stability coefficients were highly stable. The more the correlation coefficient between the two experiments was 70% or more, the stronger the correlation coefficient.

Objectivity: The researcher relied on arbitrators * to record the test results from people of experience and specialization, and all the results appeared high. The more the correlation coefficient between the two experiments was 70% or more,

the stronger the correlation coefficient.

Field research procedures

Pre-tests

The pre-tests for the research sample were conducted on Thursday, 3/7/2023, at ten o'clock in the morning, at the Ramadi Club stadium in the center of Anbar Governorate. The conditions for the tests were fixed in terms of place, time, and (assistant work team). In order to achieve the same conditions as much as possible when conducting the final tests for the research sample.

Implementation of the training curriculum

The training curriculum was designed using the exercises, especially Appendix (1), and the training curriculum included (24) training units at a rate of (3) training units per week. After completing the pre-tests, the training curriculum was implemented for a period of (8) weeks starting from Saturday 16/3/2012 and its training units ended on Wednesday 15/5/2012. The curriculum included the following

- The time of the training unit is (90-120) minutes.
- The load cycle between weeks is (1:3), i.e. three weeks of progressively increasing the load and one week of descending.
- The curriculum is applied during the special preparation period and using the high-intensity interval training method (80-90%) and the repetitive training method (90-100%). The duration was divided for each method into four weeks.
- (24) Exercises were placed in different spaces.
- The curriculum was for the main section only for the experimental group.
- While the control group applied the curriculum followed by the trainer, and the experimental group shared with the control group only the preparatory section (warm-up) and the final section.
- (3) training units were given per week and with a load formation (1:2), i.e. using a gradual load with two units going up and one training unit going down the load. Table (6) shows the daily, weekly, monthly and total intensity rate of the curriculum.

Table 5: Shows the daily, weekly, monthly and total intensity rate of the curriculum

Training method	Intensity rate		Training units			Weeks
	Monthly intensity rate	Average intensity of the week	Third	Second	First	
High intensity interval training method	84.25%	81%	81%	82%	80%	the first
		84%	84%	85%	83%	the second
		87%	87%	88%	86%	the third
		85%	85%	86%	84%	Fourth
Repetitive training method	94.25%	91%	91%	92%	90%	Fifth
		94%	94%	95%	93%	Sixth
		97%	97%	98%	96%	Seventh
		95%	95%	96%	94%	The eighth
89.25%		Curriculum intensity rate				

Post-tests

The post-tests were conducted after the completion of the main experiment at 10:00 am on Saturday 18/5/2013 for the skill tests, and the same conditions were taken into account in which the pre-tests were conducted to avoid the variables of the conditions on the post-tests of the research sample.

Statistical Methods

Using the statistical bag: SPSS

Arithmetic mean. Standard deviation. Simple correlation

(Pearson). Test ((T-test for correlated groups. Test ((T-test for independent groups. Coefficient of skewness.

Presentation, analysis and discussion of the results

Presentation and analysis of the results From Table (6) it is clear to us that all values of (t) are significant, as the tabular value of (t) under the degree of freedom (11) and the error level (0.05) is 1.79, and the calculated values are higher than the tabular ones.

Table 6: Shows the differences between the pre-test and post-test for the research variables in the control group

Statistical significance	t tabular	t calculated	The dimension		Tribal		Search variables	No
			A	S	A	Q-		
Moral	1.79	4.32	1.28	2.11	1.59	1.45	Explosive power	1
Moral		4.25	1.24	3.22	1.58	4.22	Top gear	2
Moral		5.55	1.54	10.21	1.1	11.1	Fitness	3
Moral		4,258	1.74	30,36	3.62	36.57	Skill performance	4

Table 7: Shows the differences between the pre- and post-test of the research variables in the experimental group

Statistical significance	t tabular	t calculated	The dimension		Tribal		Search variables	No
			A	S	A	Q-		
Moral	1.79	4.32	1.38	3.12	1.78	1.43	Explosive power	1
Moral		4.25	1.85	3.01	1.47	4.26	Top gear	2
Moral		5.55	1.69	9.10	0.54	11.21	Fitness	3
Moral		9,258	0.98	26,16	1.70	35,36	Skill performance	4

From Table (6) it is clear to us that all values of (t) are significant, as the tabular value of (t) under the degree of

freedom (11) and the error level (0.05) is 1.79, and the calculated values are higher than the tabular ones.

Table 8: Shows the differences between the post-test of the research variables in the control and experimental groups

Statistical significance	T tabular	T calculated	Empiricism		The officer		Search variables	NO
			A	S	A	Q-		
Moral	1,717	4.56	1.38	3.12	1.28	2.11	Explosive power	1
Moral		2.22	1.85	3.01	1.24	3.22	Top gear	2
Moral		4.28	1.69	9.10	1.54	10.21	Fitness	3
Moral		9.27	0.98	26,16	1.74	30,36	Skill performance	4

From Table (8) it is clear to us that all values of (t) are significant, as the tabular value of (t) under the degree of freedom (22) and the error level (0.05) is 1.717, and the calculated values are higher than the tabular ones.

Discussion of the results

After reviewing the results shown in Tables (6, 7, 8), it is clear to us that the experimental group had a better level than the control group, as evidenced by the results we found in the aforementioned tables, and this indicates the significance of the differences in favor of the experimental group. The results of the experimental group whose members applied the special exercises led to the development of the level of skill performance, and their level development was better than the control group that did not use the special exercises but worked according to the method set by the team coach. The reasons for this development and preference are due to the researcher carefully choosing exercises that are completely similar to what happens in the matches. Regarding this, (Hanfy Mahmoud Mukhtar) indicates that the player's skill performance ability "is one of the important abilities of a football player. In order for the player to be able to perform skills during matches at the ideal speed, the coach must be concerned with choosing exercises that are completely similar to what happens during matches and train the players on them with gradual performance until the players get used to performing them with the same strength and speed that they should be performed with during the match. The special exercises were largely identical to what happens during the match, and the researcher was keen for the players to perform these exercises with the intensity set before each exercise. They were also keen to perform the special exercises at all times and in different circumstances. He was also keen for the exercises to be varied and comprehensive for the different situations that the player may go through during the match, taking into account the variety in the player's starting distances. (Osama Kamel Rateb 1990) [1] indicates that "good

training methods are in themselves a driving force for athletes also states that "the development of the training situation in specialized sports comes through the combination of several components, including working to reach training volumes and planning to create the maximum balance between training loads for preparation and competitions, in addition to taking into account the relationship between intensity and rest, all of which are factors that help the player to progress steadily and noticeably without any side effects." Since developing skill performance represents a form of construction consisting of several interconnected skills performed in succession and each one affects the other, the coach must prepare his players to face changing situations in competition, by raising the level of skill performance. The special exercises included in the curriculum are similar to what happens in the match, as well as the use of the correct scientific progression in the training process, which led to the development of the experimental group in a better way in terms of test time and their superiority over the players of the control group, which developed slightly compared to the experimental group. This is confirmed by (Qasim Lazam Sabr) who said, "Training using specific area exercises is an effective method in developing the ability and capacity to perform correctly after training to perform those skills in specific areas that work to increase the accuracy and speed of performing skills by beginners, juniors and senior levels alike because of its effective impact in developing the player physically, skillfully, tactically and psychologically and for all age groups, so most modern football schools in football have resorted to it."1 In addition, the reason for the development of the experimental group in the skill performance tests under study is due to the training curriculum and the effect of special exercises in different areas with high intensity and in the two methods of high-intensity interval training and the method of repetitive training, as (2013 Robert Śliwowski) confirms that the organized application of training loads according to scientific foundations in training programs will

lead to To raise the efficiency of the player's functional devices, which is reflected in his physical and skill performance. 2. Therefore, the exercises used in the training curriculum, which relied on repetitions and high intensity throughout its implementation period, and providing appropriate rest periods between exercises, and exercise groups, which were developed to suit that training period, i.e. the team's special preparation period, through diversification and change in those exercises and in different circumstances, as good mastery of skill performance can only be achieved by raising the level of basic physical qualities and abilities related to skill performance. Accordingly, physical and motor abilities must be linked to training on basic skills in conditions and situations similar to the atmosphere of the match, as training helps to link those skills to increase the players' motivation and enthusiasm to exert more effort, which leads to improving the player's skill performance. This is consistent with what (Salam Al-Balbisi) indicated that "training on skills must be under conditions similar to the atmosphere of the match"³ (4: 80)

Conclusions and recommendations

Conclusions

1. Significant differences appeared between the pre- and post-tests in favor of the post-test for the experimental and control groups in physical and motor abilities and the level of skill performance in football.
2. Significant differences appeared between the post-tests for the control and experimental groups in favor of the experimental group in physical and motor abilities and the level of skill performance in football.
3. There was a development for the experimental group in physical and motor abilities and the level of skill performance in the post-test.
4. The control group that used the traditional method achieved a significant difference between the pre- and post-tests in physical and motor abilities and the level of skill performance, but this development was not at the level achieved by the experimental group.

Recommendations

1. Adopting the training method in different areas and components of the training load that was applied during the implementation of the training method when training other samples of different ages for football players.
2. The necessity of the coaches' interest in the youth category in developing their physical and motor abilities to coincide with the development of the level of skill performance among the players in order to keep pace with the modern physical, skill and tactical requirements in football.
3. Emphasizing the use of special exercises under study in the special preparation period for football players.
4. Using the special exercises studied in developing other physical, motor or physiological variables in subsequent studies similar to the current research topic.

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