

The effect of the intensive training method on some bio-kinetic abilities and the accuracy of the spiking serve skill in volleyball for juniors

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Abstract

The purpose of this paper is to preparing exercises using the method of intensive training to develop some bio-kinetic abilities and the accuracy of the skill of spiking serve in volleyball for juniors, recognizing the effect of the intensive training method on the development of some bio-kinetic abilities and the accuracy of the skill of spiking serve in volleyball for juniors and recognizing the superiority of influence between the control and experimental groups in the development of some bio-kinetic abilities and the accuracy of the skill of spike serve in volleyball for juniors. the researcher has adopted the experimental approach with two equal groups (experimental and control). The two tests (pre and post) are due to their relevance to the nature of the research problem. The research community represented the youth of Kufa Sports Club in volleyball, which numbered (22) players, and the basic sample included (20) players, as they were chosen by random method (the lottery) and were divided into (10) players for the control group, in which the coach's style was followed, and (10) a player for the experimental group, on which the intensive training method is applied, and (4) players were used to conduct exploratory studies for research from the same research community. One of the most important conclusions reached by the researchers is that: The use of the intensive training method has shown a positive effect in developing some of the bio-kinetic abilities of the juniors of the Kufa Volleyball Sports Club, and the use of the intensive training method has shown a positive effect in developing the skill performance of spiking serve in volleyball among the juniors of the Kufa Sports Club in volleyball. One of the most important recommendations that researchers recommend is that: Emphasizing the importance of using the intensive training method in developing the bio-kinetic capabilities and skill performance of young players, and paying attention to the principle of increasing the number of repetitive attempts to increase the speed of mastering the accuracy of spiking serve in volleyball.

Keywords: Intensive Training, Bio-kinetic Abilities

Introduction:

In the modern era, the world witnessed a great development in various fields, which was reflected in the various physical aspects of physical education and sports, which led to the emergence of many problems in this field. The need for scientific research was the best way to address these problems, and there is no doubt that relying on the method the scientific field with its modern and multiple trends in various fields in general and the sports field, in particular, helps to reach the higher levels.

Scientific research is the only way to confront educational, psychological, social, sports and other problems it is one of the problems associated with various areas of life. It is an indispensable necessity for every actual sound planning. In light of the accurate data collected by researchers, it is possible to form an honest picture of various phenomena and identify the basic needs of individuals and societies.

In addition, the scientific development in the sports field imposed new, limitless horizons in sports sciences, including the science of sports training, which developed rapidly. In a sound and planned manner, and it comes to the principles and foundations presented by the science of sports training that serve the development of the training process in light of the spread of professionalism, and what it requires of performance is more complex and developed. Following all that is new in the science of training has become a necessity that must be taken into account when planning the training process and the development of its own programs in all sports, including volleyball.

One of the methods used in sports training is the intensive training method, and the main function that determines the training process in this method is the distribution of time and rest times between each training and another and between the repetitions of each training and other training. The teacher, during the development and organization of the exercises during the training units, the intensive training gives a relatively little rest rate between the training attempts.

The game of volleyball is one of the team games that has its basic principles and has different skills and including offensive skills (serving, spiking, preparation), defensive skills (such as defending the court - and receiving) and defensive offensive skills (blocking), as these skills are linked with each other Some are close and strong, so any weakness in the level of their performance

leads to a drop in the level of the team and the loss of the match (George Iskandar and et al.) believes that "serving is one of the most important direct attack skills that players use during the match, and it is one of the skills that has developed greatly." Alternatively, a player can get direct points without his team members making any effort, and the factors for the success of servers are many and varied. The player's possession of the ideal level of physical and kinetic capabilities, which are the important factors in the performance of the serve, is accurate, and this is the basis for applying a successful tactic and reaching an accurate transmission. The coach must know everything that affects the success of the transmission, so the importance of research lies in the use of the intensive training method in developing some Bio-monopoly abilities and accuracy of the skill of smashing serve in volleyball on a sample of junior players of the Kufa Sports Club in volleyball.

Research problem:

The great scientific development witnessed by various sports, especially volleyball, is due to the benefit of workers in the sports field from following the sound scientific method and modern training methods in order to achieve the goals they seek. From the points through the skill of serving and at the same time trying to prevent the other team from getting points, serving is one of the most basic principles in the game of volleyball.

And given that the researcher is one of the workers in teaching and training the game of volleyball, this is what prompted the researcher to research to use the best training methods, which is the method of intensive training and investing this method in developing some bio-kinetic capabilities, which have an effective role in developing and improving the accuracy of the performance of spiking serve among players and their different levels.

From this point of view, the researcher sought to know the effect of the intensive training method on the development of some bio-capabilities and the accuracy of the skill of crushing serve in volleyball for the juniors of the Kufa Sports Club for the season 2021-2022.

Research objective:

- Preparing exercises using the method of intensive training to develop some bio-kinetic abilities and the accuracy of the skill of spiking serve in volleyball for juniors.
- Recognizing the effect of the intensive training method on the development of some bio-kinetic abilities and the accuracy of the skill of spiking serve in volleyball for juniors
- Recognizing the superiority of influence between the control and experimental groups in the development of some bio-kinetic abilities and the accuracy of the skill of spike serve in volleyball for juniors

Research hypotheses:

- There is a positive effect of the method of intensive training in developing some of the bio-kinetic abilities and the accuracy of the skill of spiking serve in volleyball for juniors.
- There is a preference for the effect of the method of intensive training in developing some of the bio-kinetic capabilities and the accuracy of the skill of Spiking Serve in volleyball for juniors.

Research fields:

- Human field: Kufa Sports Club junior volleyball.
- Time field: (20/12/2021) to (12/3/2022)
- Spatial field: Kufa Sports Club Hall

Research methodology and field procedures:

Research Methodology:

" The study of the nature of the phenomenon that the researcher deals with is what determines the nature of the curriculum, because the curriculum is a method by which a person arrives at the truth" (Chu , D . 1992), and scientific facts are reached through research and investigation, and for that, the researcher has adopted the experimental approach with two equal groups (experimental and control). The two tests (pre and post) are due to their relevance to the nature of the research problem.

Community and sample research:

The research community represented the youth of Kufa Sports Club in volleyball, which numbered (22) players, and the basic sample included (20) players, as they were chosen by random method (the lottery) and were divided into (10) players for the control group, in which the coach's style was followed, and (10) A player for the experimental group, on which the intensive training method is applied, and (4) players were used to conduct exploratory studies for research from the same research community.

Sample equivalence:

In order for the researcher to be able to attribute the differences in the results of the post-tests of the variables under study to the effect of the experimental factor, and for the sample members to have one starting line, the researcher resorted to verifying the equivalence of the two groups, using the (t) test for independent samples, as shown in the table (1).

Table (1) shows the equivalence of the two groups in all the research variables

Variables	Measuring unit	Pre (control)		Pre (experimental)		T value	level Sig	type Sig
		Mean	standard deviation	Mean	standard deviation			
Explosive Power	Watt	1112.18	0.981	1114.22	0.812	1.043	0.114	Non sig
Force characteristic of speed	Count	8.12	0.644	8.32	0.732	1.321	0.151	Non sig
Physical flexibility	Cm	10.23	0.881	11.05	1.022	1.234	0.066	Non sig
Spiking serve accuracy	degree	22.13	1.043	23.11	0.912	1.015	0.071	Non sig

Means, tools and devices used in the research:

Data collection methods:

- Arab and foreign sources and references.
- Personal interviews.
- Tests and measurements.
- Special forms for recording test results for students.

Tools and equipment used:

- Electronic calculator (laptop) number (1).
- Electronic stopwatch, type (2).
- Plastic poles (12).
- Volleyball arena.
- Legal volleyballs (6).
- Two (2) whistles.
- Sticky tape
- Forms for recording test results.

Field research procedures:

Description of the tests

First, the Babylon test to measure the explosive Power of the muscles of the legs (the three-step vertical jump test): (Chu , D . 1992)

- The purpose of the test: is to measure the explosive Power of the muscles of the legs.
- Necessary tools: medical scale - tape measure - a wall on which a tape measure is attached - chalk
- Description of performance: After measuring the weight, the player raises the marked arm over its entire length to make a mark with the fingers on the wall or the blackboard, without raising the heels from the ground, and records the number in front of which the mark is placed.
- When the tester is ready on the starting line, he starts with an increasing acceleration to cover the distance to the place of getting up by only three steps, and when he reaches the place of getting up, he immediately makes a double vertical jump to the highest possible height to mark the arrival point with the fingers dipped in chalk powder. The laboratory is given two attempts to record the best and repeat wrong attempt.
- Recording: The weight and jump height data for each laboratory is recorded and processed using the following equation, bearing in mind that the weight is in newton's, and the player's mass in kilograms can be used, provided that the numerator of the equation is multiplied by 9.8

$$\text{Power (Watts)} = (\text{Mass} \times \text{jump height} \times 9.8) / (\text{jump height} \times 2 / 9.8)^{1/2}$$

Secondly / the test of bending the arms and extending them from the prone position for a period of (10) seconds (Lloyd Read head,. 1987)

- The purpose of the test: To measure the speed characteristic of the two arms.
- Necessary tools: stopwatch, whistle.
- Description of performance: From a prone position, bend and extend the arms as many as possible within 10 seconds.
- Conditions :
- The body took the correct inclined prone position.
- Take into account the touch of the chest to the ground while bending the arms and then fully extending them.
- Recording: The laboratory records the number of times the bending and stretching are performed within (10) seconds.

Third / bend the torso from the front from standing (Lloyd Read head,. 1987)

The purpose of the test: To measure the flexibility of the trunk and spine.

- Necessary tools: a seat without a back, height (50) cm, a non-flexible ruler divided from zero to (100) cm, fixed vertically on the seat so that the number (50) is parallel to the surface of the ruler and the number (100) is parallel to the bottom edge of the seat, a wooden pointer that moves on the surface ruler.
- Description of performance: The tester stands on the bench with the feet together with the toes touching the edge of the bench. From this position, the tester bends the torso forward and down so that he pushes the pointer with his fingertips as far down as possible.
- conditions :
- The knees should not be bent while bending the torso.
- The torso should be bent slowly.
- It must be held at the deepest distance reached by the laboratory for a period of two seconds.
- Each laboratory has two attempts to score the best.
- Recording: The laboratory records the distance it was able to reach (cm) and its parts.

Fourth / testing the accuracy of spiking serve in volleyball (Lloyd Read head,. 1987):

Serve accuracy is measured using the serve accuracy test to specific regions

- The purpose of the test: To measure the accuracy of the skill of spiking serve. Tools: Volleyball court legal, 15 volleyballs
- Performance specifications: From the serve area, the laboratory performs (10) combined legal transmissions to apply the planned playing field, and each grade within this division is considered as the degree granted to the laboratory if the ball falls within this area.
- Conditions :
- Involve a performance every time serve in accordance with the legal terms serve
- In the event, the ball falls on the line between two areas, the tester will be given the score in the higher area.
- Recording: The laboratory records the total points it has obtained, but the scores are listed in areas from (1) to (5), so the maximum score for this test is (50) degrees.

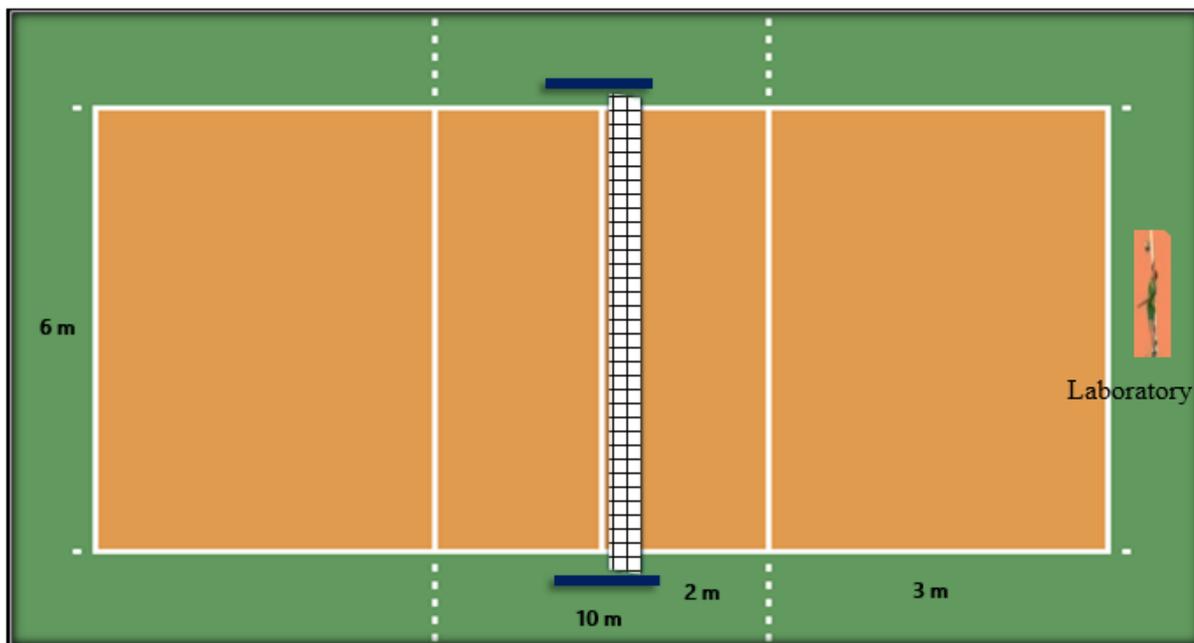


Fig (1)

Shown the spiking serve test

Exploratory experiences:

The exploratory experiment was conducted before starting the basic experiment in order to know the most important obstacles and negatives in order to be addressed, and the purpose of the exploratory experiment is:

- Knowing the suitability of the tests to the research sample and measuring the time of its performance.
- Ensuring the validity of the hall and the tools used and their suitability for the tests.
- Preparing the auxiliary work team, as well as identifying the difficulties they may face.
- Knowing the difficulties that may face during the course of work and developing the most appropriate solutions to them.

Pre-tests:

The researcher conducted the pre-tests on (Wednesday) corresponding to (22/12/2021) at (9:00) am in the Kufa Sports Club hall on the two research groups (experimental and control) according to the specifications and performance conditions for each test.

Steps to prepare plan and apply the intensive training method:

The researcher prepared and organized the method of intensive training based on personal experience, and the application of appropriate exercises within the skill requirements was started on the experimental group on 12/24/2021 until 3/3/2022. (Intensity, repetitions, appropriate rest periods) were taken into account, and the researcher codified these exercises on a scientific basis, taking into account individual differences and potentials for emerging players.

Post-tests:

After completing the exercises in the style of intensive training, post-tests were conducted on the control and experimental groups on (Saturday) corresponding to 5/3/2022 at nine in the morning, in the same place and under the same conditions under which the pre-measurement was conducted.

Statistical methods: The search data was processed through the Statistical Package for the Social Sciences (SPSS).

Presentation, analysis and discussion of results:

Presentation and analysis of the results of the pre and post-tests for the control group in the research variables:

Table (2) shows the arithmetic means, standard deviations, the (t) value calculated for the interconnected samples, the level of the test significance, and the significance of the difference for the pre and post-tests of the control group for the researched variables.

Presentation and analysis of the results of the pre and post-tests of the experimental group in the research variables:

Variables	Measuring unit	Pre-test		Post-test		T value	level Sig	type Sig
		Mean	standard deviation	Mean	standard deviation			
Explosive Power	Watt	1112.18	0.981	1144.1	0.771	19.124	0.003	sig
Force characteristic of speed	Count	8.12	0.644	9.11	0.687	8.223	0.000	sig
Physical flexibility	Cm	10.23	0.881	11.08	0.451	1.002	0.082	Non sig
Spiking serve accuracy	degree	22.13	1.043	28.13	0.343	13.921	0.000	sig

Table (3) shows the arithmetic means, standard deviations, the calculated (t) value of the interconnected samples, the level of test significance, and the significance of the difference between the pre and post-tests of the experimental group for the variables investigated.

Variables	Measuring unit	Pre-test		Post-test		T value	level Sig	type Sig
		Mean	standard deviation	Mean	standard deviation			
Explosive Power	Watt	1114.22	0.812	1182.4	0.237	22.34	0.000	sig
Force characteristic of speed	Count	8.32	0.732	10.3	0.442	17.04	0.000	sig
Physical flexibility	Cm	11.05	1.022	14.2	0.711	9.145	0.000	sig
Spiking serve accuracy	degree	23.11	0.912	36.18	0.434	8,871	0.000	sig

Presentation and analysis of the results of the post-tests of the two experimental and control groups in the research variables:

Table (4) shows the arithmetic means, standard deviations, the (t) value calculated for the interconnected samples, the level of the test significance, and the significance of the difference for the post-tests of the control and experimental groups for the variables investigated.

Variables	Measuring unit	Post (control)		Post (experimental)		T value	level Sig	Type Sig
		Mean	standard deviation	Mean	standard deviation			
Explosive Power	Watt	1144.1	0.771	1182.4	0.237	34.221	0.000	sig
Force characteristic of speed	Count	9.11	0.687	10.3	0.442	6.641	0.000	sig
Physical flexibility	Cm	11.08	0.451	14.2	0.711	7.445	0.000	sig
Spiking serve accuracy	degree	28.13	0.343	36.18	0.434	21.034	0.000	sig

Discuss the results:

The results that were presented in Tables (2) and (3) to test the bio-kinetic abilities and test the skill of spiking serve in volleyball showed that there are significant differences between the tribal and remote tests and in favor of the post-tests for the control and experimental groups, and the researcher attributes the reason for this moral difference to the members of the control group due to what was done Its application of exercises and exercises with methods and methods prepared by the trainer in his training units, as it caused the development of some bio-kinetic capabilities and skill development among the young players, and the researcher considers the reason for the moral difference of the skill performance of the members of the control group due to the repetition of exercises prepared by the trainer and performed by the players in the training units And regularity in the training process, and repetitions lead to the consolidation of the motor program in the learner and the expansion of his perceptions and concepts in order to understand the skill and its clarity, This was confirmed that "the excessive repetition of any work will reduce error rates and increase learning rates, as well as lead to the speed of withdrawing information from memory, so the learner is given many attempts while starting to learn" (Ellen Kregh baum).

The results presented in Table (2) for the tests of bio-kinetic abilities and the test of the crushing serve skill in volleyball showed that there were significant differences between the tribal and remote tests and in favor of the post-tests of the experimental group. Before the researcher, where these exercises included strengthening the muscles in the center of the body of great importance in the game of volleyball and that regular training can lead to positive results and bring about changes in the training process and this means that the exercises led to this progress in performance and development of bio-kinetic capabilities (Explosive Power, Force characteristic of speed, physical flexibility), in addition to the fact that the use of the intensive training method provides the opportunity to focus on developing and mastering the skill through continuous repetitions and taking advantage of the time of the training unit, thus leading to the progression of the players' level.

The researcher also attributes that the rationing of the training load by the method of intensive training is one of the important factors that led to an increase in the level of bio-kinetic capabilities, because the development of any ability, whether physical or kinetic, depends on the correctness of rationing the components of the external load (intensity, size, comfort), and the researcher has relied on that On the literature of the intensive training method in the development of bio-kinetic abilities, by codifying the repetition of performance with the nature of the intensity used, so the researcher believes that proper and good planning had a clear impact on the development of bio-kinetic abilities and skillful performance of the members of the experimental group, which the researcher intended to be the training process for An organized and integrated process to achieve the goal of these exercises, and then achieve the research hypotheses.

Also, while we observed the results presented in Table (2) regarding the test (spiking serve in volleyball) between the tribal and remote tests for the members of the experimental group, there were significant differences between the pre and post-tests for the members of the experimental group and in favor of the post-test, so the researcher attributed the reason for the moral differences between the two tribal measurements The second is to the researcher's approach to dealing with this variable because of its great importance in the game of volleyball, as he prepared his exercises in the style of intensive training in line with the characteristics of that variable and the players' physical and kinetic capabilities. The exercises were also prepared to be in harmony with the nature of performance and the motor paths of the skill, and they were regulated according to the method of intensive training, which is one of the training methods that raise the body's ability to its maximum limits, to be a challenge to the two anaerobic energy systems, as it uses muscle strength and speed to contribute to the development of the physical and skill side of the player being Spiking serve requires great physical and muscular abilities, fast performance, and high accuracy in order to score direct points in the opponent's arena.

(Rg. Luca, A. 1996) indicates the extent to which the skill level is effective as a result of the intensive method and that the use of appropriate feedback during correcting errors for players and the optimal use of available tools has clearly improved the level, and the clarity of the goal and its consistency with the level of players and their ability to perform. It led to an improvement in performance.

Whereas, (Lloyd Read head. 1987) confirms that the clarity of goals and their identification in behavioral images related to skill performance, is meaningful. Where this study agrees with the study of (Rg · Luca, A. 1996) that the intensive method gives the player the opportunity to actually perform the skill with successive iterations and the correction of errors by the researcher leads to the development of the correct motor path of the skill, as the method of intensive training is important for mastering learning the basic skills of the game.

Conclusions and recommendations

Conclusions:

- The use of the intensive training method has shown a positive effect in developing some of the bio-kinetic abilities of the juniors of the Kufa Volleyball Sports Club.
- The use of the intensive training method has shown a positive effect in developing the skill performance of spiking serve in volleyball among the juniors of the Kufa Sports Club in volleyball.

Recommendations:

- Emphasizing the importance of using the intensive training method in developing the bio-kinetic capabilities and skill performance of young players.
- Paying attention to the principle of increasing the number of repetitive attempts to increase the speed of mastering the accuracy of spiking serve in volleyball.

References:

- Chu , D . 1992 .jumping into plyometriccs , (Human Kinetics , cham poingn II .
- Ellen Kregbaum . Biomechanics , a qualitative Approach for Studying Human Movement .
- Lloyd Read head. 1987.Man's Gymnastics Coaching Manual, Springfield Books Ltd, West york shire.
- Rg. Luca, A. 1996 . Aspect istorice , filosofice , pedagogic isieiale ale gymnastic in sistemul de intratamant. Maunheim, Institutul de cercetari al Academiei Americane -Roman .