Journal of Studies and Researches of Sport Education
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The effect of corrective exercises accompanied by mechanical feedback on some kinematic indicators and learning how to perform volleyball spiking for students

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Article information

Article history:
Received 2/5/2024
Accepted 15/5/2024
Available online 15, July,2024

Keywords:
motor learning, biomechanical variables, crushing attack, volleyball

Abstract

The aim of the research was to: Identify some kinematic indicators affecting learning to perform crushing multiplication for students at the College of Physical Education and Sports Sciences/University of Kufa. The researchers used the experimental approach with two equal groups, and the research sample was intentionally chosen, represented by students from the college of physical education. and Sports Sciences/University of Kufa, which numbered (24) students for the academic year 2023-2024. The statistical analysis program (SPSS) was used to obtain the results. The researchers concluded that the corrective exercises accompanied by mechanical feedback showed a positive effect on some kinematic indicators and learning the skill of hitting the volleyball. For students, the researchers recommended the necessity of applying exercises that target mechanical indicators because of their effective role and basis in learning technical performance.

DOI: https://doi.org/10.55998/jsrse.v34i3.691

1- The research Introducing

1-1 Introduction and the importance of research

The world is witnessing a great development in various theoretical and applied sciences, and one of the most prominent of these sciences that brings the two together is the sports sciences, which we see developing in general. We also notice the development of one of its most important sciences, which is the science of motor learning in particular, as a result of the use of modern educational methods in an integrated manner with the science of biomechanics. Kinetic analysis, the use of which has become essential in the educational process and educational to improve the level of learners' performance with the educational situation related to motor skills.

In order to reach the highest sporting levels, all countries were interested in harnessing the potential and capabilities available to them in order to achieve their goals and compete with each other to achieve sporting achievements. Perhaps the continuous development in all sports came as a result of interest in scientific research and solid studies in order to reach the desired goal. Volleyball is one of the games that... It requires a high level of physical and skill performance, and this cannot be achieved without using modern methods, as motor learning gives the learner a large space to learn the skill to be learned on a regular basis, which results in linking concepts to each other in a sequential and complementary manner according to the learner's level by increasing his level of awareness and the nature of His understanding of performance, and storing information in a way that ensures its retrieval when needed, especially at the advanced level of learning stages.(Ameer et al., 2021)(Hassan & Musharef, 2024)

After the researchers reviewed most of the literature and previous research, it was found that improving performance in volleyball skills depends on two basic factors, the method and style of teaching first, and the biomechanical variables affecting performance second, and many studies in the game of volleyball have dealt with important topics related to motor learning, teaching methods, and the most important mechanical indicators, and the most important of them must be mentioned. Briefly.

study(Lazem et al., 2024)so the researchers concluded that curriculum engineering witnessed an improvement of 88.35%, that artificial intelligence strategies witnessed an improvement of 67.5%, and that the digital methodology witnessed an improvement of 70.28%. The researchers recommend always striving to use these standards in building the digital methodology in the various games in the subject of physical education and science. Sports.

As for studying(Ali & Qasim,2024) concluded the two researchers that the effect of applying the learning method for mastery by applying the Bloom model in learning the basic skill in volleyball. The researchers recommend a set of recommendations, the most important of which is the necessity of using the problem-solving method in learning the basic skills in volleyball in the educational curriculum for colleges of physical education and sports sciences...

As for studying(amr et al., 2024)The researchers concluded that the self-regulated learning method helps with the freedom of self-regulation in improving the reflective thinking of female learners of skill performance in volleyball. The researchers recommended that it is necessary

to pay attention to individualizing education in scientific lessons in volleyball and integrating cognitive and behavioral learning in order to better achieve the goals of skill learning.

As for studying((2021)The researcher concluded that the player in the handball shooting skill of jumping forward or high performs the shot at a point lower than the maximum height of the center of mass, that is, after starting the descent. It was found that in the skills of the ace and the ace, the performance of hitting the ball is performed after the descent process begins from the maximum height of the center of mass in the flight path. The researcher recommended emphasizing that the performance of the main section usually occurs after the athlete descends from his maximum height, which causes a drop in the aiming point or hitting the ball. Therefore, attention must be paid to increasing the maximum height in a way that is commensurate with the type of skill and preparing exercises that contribute to increasing the athlete's ability to speed. Performing the shot or hitting the ball so that the drop in the center of mass does not increase significantly, which causes an inappropriate height for the starting point of the ball, especially for the ace and the ace. Finally, study(Ibrahim, 2020)The experiment fulfilled the research hypotheses and results were reached Positive.

Importance and purpose Search in preparation Corrective exercises (mechanical feedback) in some kinematic indicators to improve learning to perform the spiking hit Volleyball for third-year students in colleges of physical education and sports sciences and mastery of technical performance in which Using theoretical and applied mathematical sciences and achieving all general and specific means and requirements for success for students.

We realize that this is one of the most important of these methods and requirements is the science of biomechanics and how to invest mechanical indicators in diagnosis first and then treatment second through the application the conditions and the laws of movement sciences (corrective exercises) which the researcher considers one theoretical science that can be applied in practice.

Research problem

Through the researchers' simple experiment in the ball game volleyball and their observation of volleyball lessons in colleges of physical education and sports sciences found that the importance of learning to perform the most important offensive skill in volleyball, namely (crushing), through which round points are most often decided, is limited to the extent of the possibility of analyzing it and identifying the stages of its performance (approaching, getting up, hitting).) and identifying the numerical values of the indicators and the mechanical conditions in them, especially when leaving the ground so that the student turns into a projectile, not to mention choosing the teaching method and the optimal method for providing feedback of all kinds to correct the student's position and the path of the ball in a skill that we often notice a lack of mastery due to the requirements of its rapid performance, which creates an atmosphere of confusion. difficulty among students therefore, the researchers considered this to be one of the most important problems that hinder students' learning of this skill, which led to seeking and researching a solution to this problem by preparing corrective exercises accompanied by mechanical feedback and giving repetitions at a moderate level of difficulty for the purpose of learning the three sections of the skill (preparatory, main, and final).

research aims.

1- Identifying some kinematic indicators affecting learning to perform crushing multiplication for students at the college of physical education and sports sciences/University of Kufa.

2- Preparing corrective exercises accompanied by mechanical feedback that target some kinematic indicators and learning to perform the spiking hit for students at the College of Physical Education and Sports Sciences/University of Kufa.

3-Recognize the effect corrective exercises accompaniment to feed the coming back the mechanical which is targeted some kinematics indicators and learning to perform crushing hit.

Hypothetical search

1- It is there statistically significant differences between the pre-post tests for the two research groups (experimental and control) in some kinematic indicators and learn to perform a spiking for students of the College of Physical Education and Sports Sciences/University of Kufa.

2- There are statistically significant differences between the post-tests of the two research groups (experimental and control) in some kinematic indicators and learn to perform a spiking in favor of the experimental group. As in a study(Karim & Al-Diwan, 2024) conclude that there is a correlation between the flexibility test and the forward jump shot of the emerging wing players and the motor balance test and the forward jump shot of the hand wing players.

Research areas

1- Human Field: Students at the College of Physical Education and Sports Sciences/University of Kufa/third stage/for the academic year (2023-2024)

2-Field Temporal:(1/2/2024) M up to (25/4/2024) AD.

3-Field Location: Volleyball court / Great indoor hall / College of Physical Education and Sports Sciences / University of Kufa.

Method and tools:

Experimental approach fig the equal (Dhafer, 2012)And it was done to choose Community And a sample Search using the intentional method with students from the College of Physical Education and Sports Sciences/University of Kufa, the sample number was (24), they were divided by lottery into two groups (experimental and control) and each group had (12) students for the academic year 2023-2024 AD.

The researchers experience reconnaissance on the research sample on a day For anyone 18/2/2024 AD in 8:30 in the morning volleyball court/large indoor hall, College of Physical Education and Sports Sciences/University of Kufa, two students from outside the sample the main experiment was then conducted on sunday25/2/2024Min 8:30 am on the volleyball court/large indoor hall on the research sample through a procedure Crushing multiplication test, individually for students, so that kinetic analysis cameras can measure the variables with high accuracy. (2) cameras were installed for kinetic analysis of the type (CASIO FH13.5) At a speed of 120 frames per second, the first camera is at a height of 1.3 meters, perpendicular to the distance of the last step to approach and rise, and at a distance of 4 meters from the field of movement, and the second camera is at a height of 2.1 meters, perpendicular to the field of movement at the moment of the crushing blow, for the purpose of analyzing the kinematic

indicators and calculating their numerical values, and then developing the appropriate educational program as follows following:

Pre-test/crushing multiplication test: a test technical performance of the spiking skill rectum in volleyball and calculating the most important variables kinematics influencing it:

- ✓ **The point of the test:** Evaluation of technical performance (technique): straight spiking.
- ✓ **Tools used:** Legal volleyball court, legal volleyballs, analysis camera (2).
- ✓ **Performance Description:** The tester performs the skill of hitting the straight spiking, from the designated area to the opposite court, provided that the ball crosses the net into the opponent's areas legally.
- ✓ **Registration method**: Three evaluators (Prof. Dr. Firas Kasoub, Prof. Dr. Mahmoud Amoush, and Prof. M. Ahmed Bandar) evaluate the three attempts for each laboratory, and the final score for each laboratory student is extracted from 10 marks. Figure (1) shows how the test is conducted.

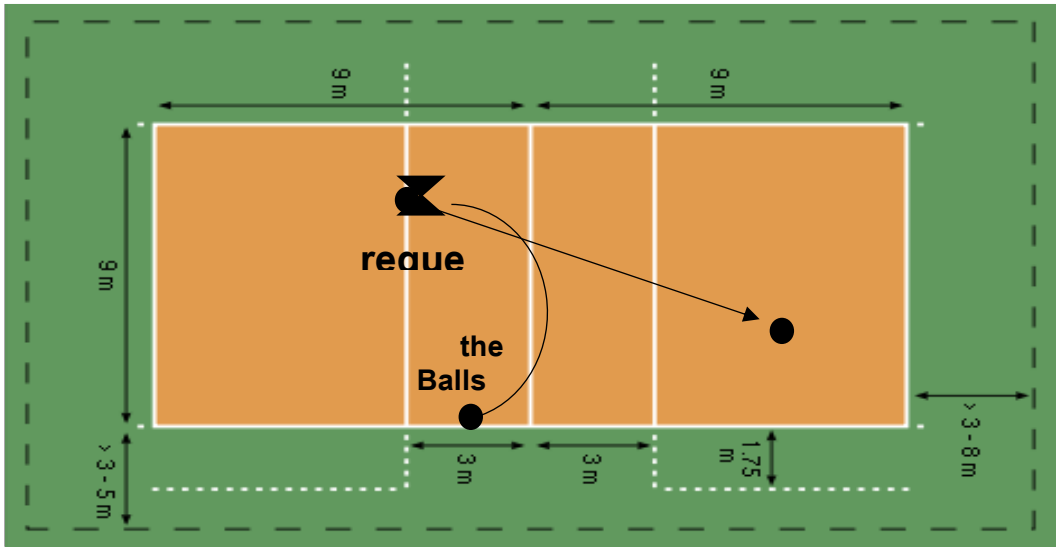

Figure (1)

Explains how to perform the overwhelming multiplication test.

How to calculate kinematic indicators with a program analysis (Kenova):

1-**Length of last step:** It is the line connecting the fulcrum of the front leg and the back leg to student the moment the back leg leaves the ground and makes the first touch for earth from the front leg, as shown in Figure (2).(Al-Azzawi, 2014)

2- The time of the last step: The time taken by the body's transitional movement to cover the distance in the last step is determined and is measured (in seconds and its parts) by: Program analysis (Kenova) Asin picture(3)

Image (3)

Shows how to calculate time.

3-**Approach speed on the last step**: It is a resultant result portion, the horizontal distance between the front of the foot at the beginning of the last step to the front of the foot at the moment fulcrum on the Earth over its time, (x = m/n) as shown in the figure (4).(Al-Azzawi, 2014)

Image (4)

Shows how to calculate the approach speed in the final step.

4- The distance between leaving the land and returning to it: It is measured from the moment you leave the ground when you get up to the moment you touch the ground when you first get up landing as shown in Figure No.5).(Akour, 2000)

Figure (5)

Explains how to measure **the distance between leaving the earth and returning to it.**

5-**cornerStartingthe body:** The angle between the line passing from the center of mass of the body before the moment of leaving the earth to the center of mass of the body student after leaving the ground with the line that passes through the center of mass of the student's body and is horizontally parallel to the ground, it is measured by degrees as shown in the figure (6)(Akour, 2000)

Figure (6)

Explains how to measure **corner body starting.**

6-**Maximum rise to hip point of the moment of hitting the ball**: It is measured from the center point the mass of the body to the ground, as shown in the figure (7)(Akour, 2000)

Figure (7)

Explains how to measure maximum height point of hip to hit the ball.

7- Angle**s:** It is the angle between the line connecting from the point of the shoulder joint to the point of the center of mass of the body and the line connecting from the point of the center of mass of the body to the point of the knee joint, and it is measured from the front as shown in the figure (8)(Akour, 2000)

Figure (8)

Explains how to measure **corner the Arch Tight**

8- Ball launch speed: and the linear velocity of the ball's launch was calculated by determine the scale of the drawing and the time in which the ball moves from one point to another, as in the figure (9)(Akour, 2000)

Figure (9)

Explains how to measure Speed Starting the ball.

Homogeneity and equivalence of the two research groups:

Before implementing corrective exercises for the research sample, two important things must be done: The first is to find homogeneity among the sample members, as the skewness coefficient was calculated to find homogeneity among the sample members, that is, a normal distribution within the moderate curve for the variables related to anthropometric measurements, and Table (1) shows this.

Table (1)

It shows the homogeneity of the sample members.

Torsion coefficient	±p	Mediator	s-	measuring unit	Statistical features / pain Indicators
0.720	2.21	175.5	175	poison	Height
- 0.388	2.72	71.5	71.33	kg	Bloc
0.441	1.25	21.5	21.33	year	Chronological age

As for equivalence, the researcher resorted to: One To verify Equality of the two groups Experimental and controlled, "The researcher must form groups equivalent at least regarding the variables that are relevant to the research"(Vandalen, 1985)In order to control the variables that affect the accuracy of search results and to return Differences in effect only to the variable the independent (Exercises Corrective), the researchers conducted an operation Equality between the two groups in the pre-test using a test (T-test for two independent samples for all variables investigated in the study, as shown in the table (2).

Table (2)

It shows the process of equivalence between the pre-tests of the two research groups.

Type of significance	value Sig	value calculated	Control group pre-test		Experimental group pre-test		measuring unit	Search variables
			A	s-	A	s-		
Insignificant	0.675	0.411	0.036	1.66	0.045	1.65	meter	The length of the last step
Insignificant	0.624	0.495	0.043	0.460	0.042	0.461	second	Time of the last step
Insignificant	0.729	0.351	0.080	3.23	0.12	3.24	m/s	Speed of the last step
Insignificant	0.455	0.760	0.054	1.19	0.062	1.17	meter	The distance between leaving the ground and landing
Insignificant	0.661	0.442	5.19	146.8	6.68	147.1	poison	Maximum hip point height
Insignificant	0.612	0.564	3.17	42.4	2.50	42.2	degree	The starting angle of the body
Insignificant	0.632	0.484	11.73	115.4	9.25	117.1	degree	Tight arc angle
Insignificant	0.219	1.276	0.59	12.61	0.75	12.30	m/s	The starting speed of the ball
Insignificant	0.266	1.151	0.28	4.59	0.39	4.71	degree	Evaluation of the technical performance of spiking hit
Significant at percentage error≥(0.05) and in front of degrees of freedom (22)								

Exercises Corrective mechanical feedback:

The exercises prepared by the researchers were applied starting on Sunday, February 25, 2024, AD, with two educational units per week. The Sunday unit represents the official lesson for volleyball within the vocabulary of the third stage curriculum in the College of Physical Education and Sports Sciences/University of Kufa. As for the educational unit The second was conducted on Thursday, which is an additional session in agreement with the research sample of the two groups (experimental and control) and the subject teacher after the end of the students' lectures at twelve and a half in the afternoon, as the researchers were keen to prepare corrective exercises in a way that was compatible with the sample members by achieving the conditions the internal these are conditions specific to the learner, such as his abilities and skills, And his motivation as well as achieving the conditions the external these are conditions specific to the external educational environment, such as skill progression, presentation, etc.

The researchers worked on a combination of exercises that could help learners correct errors after each repetition performed, by filming it with a mobile phone and making it customary to photograph it, as well as by attract and control the learner's attention and telling the learner what type of educational outcomes are desired and arousal ability to remember the information and presentation of the learned skill and guiding learners as needed and conduct feedback (mechanical) occasion and encouraging methods of self-evaluation of performance and The performance with reinforcement retention informative theme learning and incentivize learning transitional. the prepared exercises included (16) educational units for two months, and the total time of the lecture was (90) minutes (15) minutes introductory part and (65) minutes main part, including (10) minutes educational assignment and (55) minutes applied homework at a rate of (5) exercises only, and the concluding part is (10) minutes, as the researchers designed (20) exercises related to (crushing multiplication), that is, for each educational unit (5) exercises that differ from one week to another, that is, after the end of the first (4) units, the exercises are repeated in the same sequence for (4) the second units, while changing the number of repetitions and increasing the difficulty of the exercise, then the third (4) units and the fourth (4) units are changed by moving the exercises in a random sequence that serves the goal of each educational unit, whether it is (the preparatory, main, or concluding part). of the skill as a whole, or (approaching, getting up, hitting), and so on. The number of minutes for the curriculum is 90 minutes x 16 weeks = 1440 minutes. The researchers were keen to carry out experimental control through the following:

1. The teacher implements and applies the educational units for the research sample Under his supervision for both for two groups (experimental and control).
2. Teaching the experimental and control groups the skills the same (Overwhelming beating) with volleyball exclusively.

3. The researchers used the principle of grading the difficulty of the exercises from easy to difficult according to the units prepared for the experimental group.

4. The teacher gives feedback to the experimental and control groups, with emphasis on mechanical feedback exclusively for the experimental group, which is the emphasis on appropriate body positions and angles and the application of mechanical conditions for the skill.

5. Use tools and methods in exercises that help students make the educational unit more interesting to achieve the desired goal of the learning process.

The researchers considered the use of less-than-maximal movements to address and correct movement imbalances and the specificity of the working muscles in order to improve the quality of movement during performance. Corrective exercises are used to determine the cause of any imbalances that lead to problems in strength, balance, and general coordination of the body’s shape. The actual exercise movements used are like the same methods of restoring Information programming in which slow, controlled movements are designed to align the body correctly. Although the goal of corrective exercise is to modify performance, it increases flexibility, increases muscle activation, increases stability, improves neuromuscular efficiency (coordination), reduces the risk of injury, improves movement patterns, and increases the ability to recover. It prepares the body for high-intensity exercises.

The post -test:

After the expiration of a period application Exercises Corrective Stomach of researchers the post-test was conducted on the research sample on the day ofOneOK4/21/2024 In full Half past eight AM on Volleyball court In the College of Physical Education/University of Kufa, the conditions were the same as during the pre-test, and at the end of the experiment the analysis was done Photography Computer-Mediated do the extraction the variables

kinematics to compare it with the pre-test and between the two tests dimensions for the two groups.

means Statistics: Researcher statistical bag ((spss Issuance (17)

Results:

Table (3)

Shows the significance of the differences between the pre-tests and the dimension of the experimental group

Search variables	Value Sig	valuet calculated	Control group posttest		Experimental group posttest		measruing unit	Type of significance
			A	s-	A	s-		
The length of the last step	0.021	2.741	0.069	1.74	0.045	1.65	meter	moral
Time of the last step	0.011	3.197	0.045	0.400	0.042	0.461	second	Insignificant
Speed of the last step	0.015	2.920	0.39	3.59	0.12	3.24	m/s	Insignificant
The distance between leaving the ground and landing	0.045	2.243	0.065	1.24	0.062	1.17	meter	moral
Maximum hip point height	0.043	2.271	4.58	153.2	6.68	147.1	poison	moral
The starting angle of the body	0.002	3.173	1.64	45.15	2.50	42.2	degree	moral
Tight arc angle	0.000	4.327	4.58	107.7	9.25	117.1	degree	moral
The starting speed of the ball	0.185	1.899	1.18	13.26	0.75	12.30	m/s	Insignificant
Evaluation of the technical performance of spiking hit	0.015	3.157	0.91	8.45	0.39	4.71	degree	moral
Significant at percentage error≥(0.05) and in front of degrees of freedom (22)								

The results showed significant differences between the pre- and post-tests and in favor of the post-tests in all variables except for the variable (ball launch speed), which was statistically non-significant despite there being an improvement of approximately 0.75 m/s in favor of the post-test. The researchers attribute the reason for these significant differences to their corrective exercises prepared on According to solid scientific foundations in order to achieve their desired goal. With regard to the variables of approach and speed, the researchers believe that the length of the step is one of the important factors for increasing the speed of this step, especially the last step before getting up, as it indicates the student's ability to maintain the level of speed at which he came. It is known that every high horizontal speed gives, as a result, when braking, a good height for the spiking skill player. The last step must be emphasized to a certain extent, as the shorter and deeper the time of the last step, the better the speed and the better the accuracy of the crushing hit (Saad & Walid, 2009). "The horizontal speed of the body's center of gravity is related to increasing the speed of movement and obtaining acceleration, and the greater the horizontal speed, the To increase jumping and convert horizontal speed to vertical speed after braking" (Hamed, 2001).(Malih, 2015) Hochmuth points out that there is a direct relationship between increasing the speed of the body and its extension, which requires synchronization of

performance and motor coordination between parts of the body and propulsion at the same time and the shortest time possible (Qasim & Iman). (1998), and (Suleiman, 1980) believes that the correlation and compatibility between the player's movement and progress, as well as the application of biomechanical conditions in the shortest possible time, is what achieves good achievement. This is consistent with the mechanical principle that time is a criterion for differentiation between the movement of bodies, and this is what the students achieved in the experimental group tried to achieve the shortest possible time. As for speed, it is the final result of the relationship between distance and time. The approximate distance for students in volleyball is very important for the preparatory stage, provided that it is covered at a high speed, that is, in a short time, especially in the last step, and that a good approach rhythm should start from Slow to fast rhythm, so that the first step is the slowest step and the last step is the fastest, so the rhythm is basically (right, left, right, left) and the last two steps are performed almost together, although some high-level players take these steps at a very high speed and from outside. The limits of the field and this depends on the player's physical ability and experience. (Othman Idham et al., 2023)

Regarding the rise and fall, researchers believe that increasing the vertical speed achieves an increase in obtaining the vertical distance by increasing the speed of the rise and reducing the time of the rise. Qasim Hassan and Iman Shaker point out that the vertical speed is related to the body's starting angle, which is directly proportional to it. Determining the horizontal distance achieved by the student's body and the projectile in the air depends on the horizontal component of its launch speed at the moment of leaving the ground. The greater the horizontal component of the launch speed, the greater the horizontal distance that the projectile can achieve (Talha, 2014).(Malih, 2016)

The height of the body's center of mass is related to the time at the moment of push and the speed of the body during the launch, through which the body gains great momentum during the decrease in push time, and this indicates the use of high amounts of force in a short moment, which causes the player to obtain the highest height. (Yasser, 2007)." In all sporting movements, the forces exerted by the athlete should be in one direction, and in return, he receives a counter force from the ground" (Al Hashemi, 2000). Accordingly, the greater the angle of the drawn arc, the greater the force exerted at the moment of full extension during the strike. As for the evaluation of performance by the residents, the results were consistent with the improvement that occurred in all kinematic indicators, which is a natural reflection of the improvement in performance and thus led to the current results.

Table (4)

Shows the significance of the differences between the tests The pre and post For the control group

Search variables	Value Sig	valuet calculated	Control group posttest		Control group pre-test		measruing unit	Type of significance
			A	s-	A	s-		
The length of the last step	0.044	2.278	0.047	1.69	0.036	1.66	meter	moral
Time of the last step	0.041	2.329	0.038	0.421	0.043	0.460	second	moral
Speed of the last step	0.008	3.235	0.30	3.54	0.080	3.23	m/s	moral
The distance between leaving the ground and landing	0.365	0.958	0.048	1.21	0.054	1.19	meter	Insignificant

Maximum hip point height	**0.235**	**1.266**	**6.27**	**148.2**	**5.19**	**146.8**	**poison**	**Insignificant**
The starting angle of the body	**0.904**	**0.150**	**2.26**	**42.6**	**3.17**	**42.4**	**degree**	**Insignificant**
Tight arc angle	**0.046**	**2.165**	**8.49**	**112.1**	**11.73**	**115.4**	**degree**	**moral**
The starting speed of the ball	**0.491**	**0.719**	**0.64**	**12.72**	**0.59**	**12.61**	**m/s**	**Insignificant**
Evaluation of the technical performance of spiking hit	**0.041**	**2.158**	**0.77**	**7.28**	**0.28**	**4.59**	**degree**	
Significant at percentage error≥(0.05) and in front of the degree of freedom (11)								

I showed the results are significant, the differences between the pre- and post-tests are in favor of the tests Dimensionality consists of five variables:(The length, time and speed of the last step, in addition to the angle of the pulled arc and performance evaluation) As for the remaining four variables, they are (The distance between leaving the ground and landing And Maximum hip point height And The starting angle of the body and the speed of launching the ball), its statistical significance was not significant, although there was a slight improvement in almost all of them and in favor of the post-test.(Al-Jadaan et al., 2020)The researchers attribute The reason for this the significant differences and noticeable improvement of the non-significant variables to the curriculum exercises prepared by the subject teachers, who are an elite group of specialized professors, in addition to the commitment of the control sample members to their formal and additional academic classes. One of the most important reasons for the success of any educational, training, or rehabilitation curriculum or program is precision work and sound scientific planning that seeks to achieve the desired goal.(Ghazi et al., 2024)(Alsaeed et al., 2023)In this regard, researchers agree with what Saad Mohsen asserts: "Opinions, no matter how different the curricula of their scientific and practical culture, are that the educational program inevitably leads to the development of achievement, if it is built on a scientific basis in organizing and programming the education process, using appropriate and gradual intensity, observing individual differences, as well as using optimal repetitions and periods." Effective interpersonal comfort under the supervision of specialized teachers and trainers under educational or training conditions Good in terms of place, time and tools used."

Table (5)

Shows the significance of the differences between the tests - between two groups Search

Search variables	**Value Sig**	**valuet calculated**	**Control group posttest**		**Experimental group posttest**		**measruing unit**	**Type of significance**
			A	**s-**	**A**	**s-**		
The length of the last step	**0.033**	**2.290**	**0.047**	**1.69**	**0.069**	**1.74**	**meter**	**moral**
Time of the last step	**0.265**	**1.159**	**0.038**	**0.421**	**0.045**	**0.400**	**second**	**Insignificant**

Speed of the last step	**0.547**	**0.615**	**0.30**	**3.54**	**0.39**	**3.59**	**m/s**	**Insignif icant**
The distance between leaving the ground and landing	**0.044**	**2.144**	**0.048**	**1.21**	**0.065**	**1.24**	**meter**	**moral**
Maximum hip point height	**0.048**	**2.118**	**6.27**	**148.2**	**4.58**	**153.2**	**poison**	**moral**
The starting angle of the body	**0.016**	**3.562**	**2.26**	**42.6**	**1.64**	**45.15**	**degree**	**moral**
Tight arc angle	**0.045**	**2.160**	**8.49**	**112.1**	**4.58**	**107.7**	**degree**	**moral**
The starting speed of the ball	**0.495**	**0.715**	**0.64**	**12.72**	**1.18**	**13.26**	**m/s**	**Insignif icant**
Evaluation of the technical performance of spiking hit	**0.050**	**2.113**	**0.77**	**7.28**	**0.91**	**8.45**	**degree**	**moral**
Significant at percentage error≥(0.05) and in front of degrees of freedom (22)								

I showed The results are significant Differences between tests Dimensionalism - Dimensionalism between two groups The research is in favor of the post-tests in six variables:(Step length The latter and the angle of the taut arc and the distance between leaving the ground and landing and maximum hip point height and the starting angle of the body and performance evaluation) As for the remaining three variables (time and speed of the last step and speed of launching the ball), their statistical significance was not significant, although there was a slight improvement in almost all of them and in favor of the experimental group.

Excellence lies in the corrective exercises prepared and accompanied by mechanical feedback, which precisely and with high accuracy determine what and what is required is to correct the performance and how to give immediate (immediate) feedback, in addition to giving a complete visualization of the movement and how to divide the skill into parts and then give a part after which the skill is linked sequentially.(Kadhim, 2020)(Hassan & Musharef, 2024)The researchers worked on gradating their prepared exercises from easy to difficult within the range of (performance correction review).It has a role in organizing the educational material in a gradual manner, which helps in learning the required material, One of the factors in the learner's acquisition of movements is the guidance provided by the teachers.(Obaid, 2006)(Kadhim et al., 2024)

Researchers confirm that Process based Educational helps to arm the players with knowledge and capabilities and creating new and creative ideas to raise their practical interests in an organized and directed manner task resolution In their prepared exercises, the researchers took into account all mechanical aspects and conditions this was reflected in their results on! the process of learning skills aims to teach, master and consolidate motor skills for the purpose of reaching the best possible level through the method used that the coach plans and implements in teaching the players."(Al-Kazemi & Al-Taie, 2012)(Muhannad, 2023)

Finally attributes the researcher reason the excellence to the posttest the importance of instilling deep knowledge and understanding in their students. "Knowledge is a revolution in the learner's understanding and learning, transforming the learner from passive and marginal

to effective and active. Knowledge is also one of the doors of study and research to understand the learner's learning methods and process and organize information."(Muhammad, 2007)Thus, the research hypotheses were achieved by the presence of significant differences between the pre-tests and the post-tests, as well as between the post-post tests, and the desired research goal was achieved.

Conclusions:

1-Exercises demonstrated Corrective mechanical feedback impact positive in some kinematic indicators and learning the skill of crushing multiplication Volleyball for students.

2- The results of the improvement of some kinematic indicators (experimental group) were reflected in the results of the virtual evaluation of the form of the skill in front of the experts evaluating the performance.

3- The results showed improved performance also for the group members Control) as a result of the subject teachers' dedication to their work and their extreme care.

Recommendations:

1- Emphasis on preparing exercises Corrective Accompanying mechanical feedback because of its positive impact on learners.
2- The necessity of applying targeted exercises Mechanical indicators Because of their effective role and basis in learning performance the technician.
3- The possibility of applying these exercises to other samples of students or youth for other events or games.

Thanks, and appreciation.

We register our thanks to the research sample, which is the students of the first stage Third / University Kufa College of Education Physical sciences Sports

Conflict of interest

The authors declare that there are no conflicts of interest

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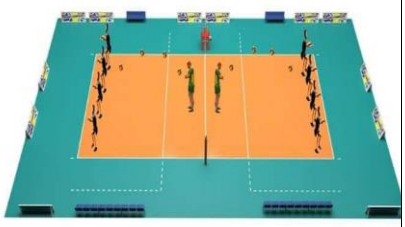
Model toOneHEducational and exercisesWeek Five 3/24/2024

Notes	Organization	Content of the educational unit	Time	Sections of the educational unit	T
			15 minutes	Preparatory section	
Emphasis on performing physical exercises correctly.	××××××××× ▲	Standing together to give some directions	3 minutes	the introduction	1
	××××××××× ××××××××× ◙	General preparation for all body organs to raise the body's basic physical capabilities.	5 minutes	General warm-up	
		Various and comprehensive exercises for the whole body serve the main part of the unit Educational and exercises Special warm-up with balls.	7 minutes	Special warm-up	
			65 minutes	Main section	2
Emphasis on clarification and simplification of explanation and students' understanding of the technical aspects of the performance	××××××××× ×××× ◙ ××××	Explanation and presentation of the skill Model of Researchers And a quick return Illustration of what was discussed in the previous unit	10 minute	Educational aspect	
Emphasis on performing exercises well and	××××××××× ◙	Content of the educational unit	Time	Sections of the	

correcting errors that occur	××××××××××			educational unit	
		Exercises: (P,P,P,P,P) Students perform the exercises as many repetitions as possible within the specified time for each exercise, 11 minutes	55 minutes The time for each exercise ranges from 11 minutes	The applied aspect	
Commitment to the system.	×××××××××× ▲	Conduct a test to determine the players' understanding of performing this level of exercises to move them to a higher level Corrective feedback and dismissal.	10 minute 5 minutes 5 minutes	Concluding section	3

		
The five exercises are performed sequentially, and each exercise has 10 minutes of work and one minute of rest. Note that correcting any performance is done with low to medium effort and many repetitions.