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The effect of using (specialized) training in improving the kinetic speed of the transmission and receiving skills of volleyball players

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ABSTRACT

Kinetic speed is an essential skill in volleyball, as it plays a crucial role in the individual and collective performance of players. Improving this speed can significantly affect players' ability to respond quickly to game changes, and perform moves accurately and efficiently. In this context, training aimed at improving motor speed is an effective tool that can contribute to enhancing players' performance and achieving better results in competitions.

Importance of Research:

1. **Improving athletic performance**: Studying the effect of training on motor speed can contribute to the development of more effective training programs, which reflects positively on individual and collective performance in matches.
2. **Enhanced Rapid Response**: Kinetic speed is vital in improving the ability to respond quickly to dynamic changes in gameplay, enhancing the ability to make quick and effective decisions.

Search problem

Kinetic speed is a vital factor in improving athletic performance in volleyball, as it contributes significantly to the players' rapid and effective response to game variables. However, many volleyball players face challenges in significantly improving this speed despite their commitment to exercise and training. Some players may lack specialized training programs that focus enough on improving motor speed. Therefore, the main problem that this research seeks to address

Research Introduction and Importance

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Research hypothesis

1- There are statistically significant differences in improving the kinetic speed of the transmitter and receiver skills of volleyball players for the experimental group between the pre- and post-tests.
2- There are statistically significant differences in improving the kinetic speed of the transmission and receiver skills of the volleyball players of the control group between the pre- and post-tests.

Research Areas:

- **Human field:** National Center for Sports Talent, Baghdad (18-19 years).
- **Time Range:** The period from 25/5/2024 to **27/** 7/2024.
- **Spatial field:** The closed hall of the National Center for Sports Talent, Baghdad.

Define terms

1. **Kinetic Speed**:
    - **Definition**: It is the ability to perform movements effectively and at high speed in a short period of time. In the context of volleyball, kinetic speed includes the ability to move quickly, change directions, jump, and go fast" (Rafid Ali Dawood, 2004, p. 6)
    - **Important**: Kinetic speed is essential for improving performance in volleyball, as it affects the speed of response to attacks and the ability to perform basic movements effectively.
2. **Specialized Training**:
    - **Definition**: A type of training that focuses on developing specific aspects of physical or skill performance, such as motor speed. It includes exercises and techniques specifically designed to improve a particular skill or set of skills.
    - **Importance**: It aims to improve specific aspects of athletic performance, which can positively affect the overall performance of athletes.

3- Research Methodology and Field Procedures:

3-1 Research Methodology:

The researcher used the experimental method by designing equivalent groups (pre- and post-tests) as it is the most appropriate and easiest approach in solving the research problem and because the experimental method "represents the most honest

approach to solving many scientific problems in a scientific and theoretical manner." (Mohammed Hassan Allawi, 1990, pp. 7-21)

2.3 Research population and sample:

The research community included the players of the National Center for Sports Talent, numbering (20) players, while the selection of the research sample came randomly and by (3) players and a percentage of (66.67%) of the original community were divided into two control and experimental groups and equally to be each group (15) players,

The researcher has excluded the exploratory experiment players and reserve players, as shown in Table (1)

Table 1

Shows the research population, sample and percentage

Percentage	Number of sample members	Total number of the community	Number	Variables
66.67%	20	30	-	Novice players
			-	Old Players
			5	Reserve players
			5	Sample exploratory experiment

3-3 Homogeneity of the sample and equivalence of the two research groups: -

3.3.1 Homogeneity of the sample:

Before proceeding with the implementation of the educational units, the researcher verified the homogeneity of the research sample in the variables related to morphological measurements (height, age and weight) as well as the technical performance of the transmission and reception skills of volleyball transmission as shown in Table (2).

Table 2

Shows arithmetic means, standard deviations and torsion coefficient for the purpose of homogeneity of the sample in variables under consideration

Torsion coefficient	Lines	Standard deviation	Arithmetic mean	Statistical milestones / Variables
0.70	150	4.54	153.2	Length/cm
0.31	68	5.33	69.7	Mass/kg
0.78	22	0.51	22.4	Age/Year

3.3.2 Equivalence of the two research groups:

Before starting the implementation of the educational units, the researcher verified the equivalence of the two research groups, which relate to the tests of the most important special motor abilities and skill tests, which are the technical performance of the skills of sending and receiving volleyball transmission, as shown in Table (3)

Table 3

Shows the equivalence of the control and experimental research groups in the tests of the most important special motor abilities, technical performance and accuracy of the skills of transmission and reception of volleyball transmission

Moral significance	Calculated t) value	Experimental Group		Control group		Statistical milestones auditions
		+ p	Going to-	+ p	Going to-	
Immoral	1.40	0.81	4	0.70	3.5	Technical performance of the transmission skill
Immoral	1.75	2.18	10.1	1.34	11.6	Transmission resolution
Immoral	0.97	1.33	3.7	0.78	4.2	Technical performance of the reception skill
Immoral	1.57	2.45	12.6	2.39	10.8	Transmitting reception resolution

The tabular value of t) at the degree of freedom (18) and the level of significance (0.05) is (2.10).

3-4 Devices and tools used in research:

In order for the researcher to complete his work to the fullest, it is necessary to use the tools and means that help them, which means "all the means and tools from which the researcher will derive at each stage of his research."(Sami Mohammed Melhem, 2005, pp. 7-12).

3.4.1 Research methods:

- Arab and foreign sources and references.

- Tests and measurement.

- Observation.

- and the interview.

3.4.2 Used devices and tools:

- Legal volleyballs number (10).

- Casio electronic stopwatch measures to the nearest 1/100 second count(4).

- Tape measurement to measure distances length (50) meters.

- Plastic whistles number (10).

- Adhesive tapes.

- Crayon.

- Smooth wall.

- Basket throat.

The researcher has given a specific degree for each of the three sections of the skill, knowing that the final evaluation of the skill as a whole (10) degrees, then the researcher presented this form to a number of experts and eunuchs in the field of (volleyball) and after collecting forms and sorting data and excluding divisions that got less than (30) of relative importance or less than (60) of the ratio \ according to

the opinion of (5) experts The results came from the acceptance of (2) type of divisions out of (6) Divisions for each of the skills surveyed as shown in Table (6)

Table 6

It shows the percentage of experts and specialists on the divisions of evaluating the technical performance of the two skills of sending and receiving volleyball transmissions.

Percentage	Materiality	Skill Sections			Skill Surveyed
58%	29	2	6	2	Transmission
48%	24	2	4	4	
88%	44	2	5	3	
70%	35	3	4	3	
38%	19	1	7	2	
46%	23	1	6	3	
-	-	-	-	-	Added partition
50%	25	2	6	2	Transmitting reception
54%	27	2	4	4	
80%	40	2	5	3	
68%	34	3	4	3	
52%	26	1	7	2	
46%	23	1	6	3	
-	-	-	-	-	Added partition

* The final score for technical performance evaluation is (10) degrees.

3.5.3 Selection of tests for the accuracy of the performance of the transmission and receiving skills of volleyball:

The researcher prepared a questionnaire form that includes a set of standardized tests used to assess the accuracy of the performance of the skills of sending and receiving volleyball transmission, which are in Arabic sources and references, then the researcher presented these tests to a group of experts and specialists in the field of volleyball and experts and specialists chose the best tests appropriate to the level and ability of the research sample and after collecting forms and sorting the data,

the tests that got less than (30) of relative importance or less than (60) of the percentage were excluded According to the opinion of (5) experts and specialists, the results came from the acceptance of (2) tests out of (6) tests representing accuracy tests for the skills of sending and receiving volleyball transmissions as shown in Table (7).

Table 7

Shows the percentage of nomination of experts and specialists for tests of the accuracy of the performance of the skills of transmission and reception of volleyball transmissions

Percentage	Materiality	Candidate Tests	Objective of the test	Type of skill
82%	41	Transmission skill accuracy for specific areas	Measuring performance accuracy	Transmission skill
58%	29	Transmission routing accuracy for specific areas		
54%	27	Test transmission from the bottom and top		
86%	43	Transmitting reception resolution	Measuring performance accuracy	Transmitting reception
52%	26	Reception accuracy from the back areas and directing the ball to the center(2)		
56%	28	Test the accuracy of reception from thrown balls		

3.6 Exploratory Experiment:

The exploratory experiment is "a mini-experiment carried out by the researcher to test the extent to which the validity of the main experiment changes, and its importance lies in identifying the negatives that the researcher will face to avoid in the main experiment" (Wajih Mahgoub, 1988, p. 78).

If the exploratory experiment was conducted on Sunday 15/5/2024 on the exploratory research sample consisting of (5) players from outside the basic research sample, and the goal of the exploratory experiment was as follows:

1- Identify the time it takes to implement the tests.

2- Identify the progress of the implementation of tests and move from one test to another to save time and effort.

3- Identify the efficiency of the assistant staff.

4- Identify the scientific parameters of the tests

3-7 Scientific transactions of tests:

3.7.1 Validity of the tests:

In order to verify the truthfulness of the tests, the researcher used the sincerity of the content by presenting the test to a group of experts and specialists to show the validity of the tests among the research sample Karama Club players and after collecting the forms (questionnaire forms), the researcher extracted the values of (Ka2) to indicate the validity of the paragraphs in measuring what was developed for him in the light of the answers of experts and specialists who were offered tests in the field of volleyball

The number of (5) experts and after collecting the forms and sorting the results, the results showed the percentage of approval of the experts and specialists on the suitability of the tests for each of the motor abilities of volleyball and the accuracy of the skills of sending and receiving volleyball transmission is (100%) as the value of (Ka2) calculated (5), which is greater than the value of (Ka2) tabular (3.84) at the level of significance (0.05), which indicates the significance of the tests and their truthfulness as shown in Table (8).

Table 8

Shows the scientific coefficients of the tests under consideration

Objectivity coefficient	Coefficient of stability	Honesty coefficient	Statistical milestones auditions
0.79	0.83	5	Motor compatibility
0.88	0.85	5	Kinetic balance
0.84	0.87	5	Agility
0.83	0.80	5	Kinetic speed
0.91	0.86	5	Transmission resolution
0.90	0.84	5	Transmitting reception resolution

3.7.2 Stability of tests:

The researcher found the stability of the tests by applying the tests on 18/5/2024 and then re-applying them to the members of the exploratory research sample under the same conditions and capabilities and with a time difference of (4) days, that is, on 5/22/2024, and the results showed that the tests have high degrees of stability as shown in Table (8).

3.7.3 Objectivity of tests:

Objectiveity knows away from bias and objective evaluation and it is known that the tests are not subject to interpretation and far from the self-evaluation of the constituent, as the researcher found the objectivity of the tests motor abilities of volleyball and tests of the accuracy of the skills of transmission and reception of volleyball by finding the simple correlation coefficient (Pearson) between the degrees of two constituents and the values of the correlation coefficients have high degrees of objectivity and as shown in Table (8).

3.8 Main research procedures:

3.8.2 Implementation of the vocabulary of educational units:

- The vocabulary of the educational curriculum lasted for (8) weeks.

- The number of educational units for each week (2) units and the number of total units (16) educational units for the total curriculum during (8) weeks.

- The time of the educational unit (90) minutes The time of applying the educational curriculum using some training lunches (30) minutes.

- The experimental group adopted the use of some training tools for a period of (30) minutes in the educational unit, while the control group adopted the method used for the volleyball learning curriculum.

3.9 Statistical Methods:

In processing the results of his research, the researcher used the following statistical means:[3]

1- Arithmetic mean. 2- Standard deviation. 3- Percentage. 4- Loom. 5- Torsion coefficient.

6- Simple correlation coefficient (Pearson). 7- Test t) for symmetrical samples. 8. Test t) for independent samples

9- Percentage of development (Mohammed Jassim Al-Yasiri and Marwan Abdul Majeed, 2001, p. 187).

4- Presentation, analysis and discussion of results:

4-1 Presentation and analysis of the results of the tests of the most important motor abilities, technical performance and accuracy of the transmission and reception skills of volleyball transmission of the control and experimental research groups.

4.1.1Presentation and analysis of the results of the tests of the most important motor abilities of the control group.

To achieve the objective of the first research, the researcher sought to extract the values of arithmetic media, standard deviations and values

Table(9)

Shows the arithmetic means, standard deviations and the value of (t) calculated in the post-tests between the control and experimental groups for the tests of the most important motor abilities

Moral significance	Value(t) Calculated	Experimental		Adjuster		Statistical milestones / auditions	
		+ p	Going to-	+ p	Going to-		
Moral	2.76	3.16	20.60	2.28	24.19	Running of different dimensions (9+3+6+3+9)m/s	Agility
Moral	2.12	1.30	16.54	0.90	19.24	Shuttle running/sec	
Moral	4.49	2.66	13.84	1.45	9.30	Lifting the torso up from the prone position on the ground with the feet fixed for (10) seconds/number	Flexibility
Moral	4.03	2.41	20.18	1.56	16.32	Bend the torso forward from sitting tall for (10) seconds/number	
Moral	3.56	3.74	21.62	3.85	15.25	Throwing and receiving balls (eye and hand match) / degree	Compatibility
Moral	4.06	1.14	4.9	1.6	2.24	Skipping Rope Test/Score	
Moral	2.53	6.63	64.4	8.20	55.5	Test above marks/score	homeostasis

Table (9) shows the arithmetic means, standard deviations and the value of (t) calculated between the post-tests of the control group and the post-tests of the experimental group of volleyball aptitude tests, as the results showed that the values of (t) calculated between the post-tests of the control group and the post-tests of the experimental group for motor abilities tests for volleyball are greater than the value of t)) tabular of (2.10) at the level of significance (0.05) and degree of freedom (18), which indicates significant differences in the post-tests between the control and experimental groups and in favor of the experimental group.

4.1.4 Discuss the results of the most important motor abilities of the control and experimental research groups.

Through what was presented in the tables (9,10,11) of the results of the tests of motor abilities for volleyball, the results showed that there are significant differences between the pre-tests and the post-tests and in favor of the post-tests and for the control and experimental groups, and the researcher attributes the reason for the emergence of these differences for the control group to the use of the curriculum followed in the college and the number of performance repetitions and as a result of the effect of kinetic transfer from other practical lessons led to the development of players' performance in the motor abilities of volleyball, as the "The many repetitions practiced by the learner during practical application help to acquire learning." (4Adel Fadel Ali, 2000, p. 95), As for the results shown by the experimental group for the values of (t) calculated from significant differences between the arithmetic media and standard deviations in the pre-tests and post-tests of the experimental group and in favor of the post-tests as a result of the impact of some training tools as they contributed significantly to the development of several basic elements, the most important of which is the development of motor abilities and be appropriate for the skill performance of the game because they are close or similar to the kinetic path as the "Special exercises serve to guide the integration of the level of fitness of a particular element, as well as the compatibility and elements of technical and tactical performance and link it to the construction of the quality of creation and psychological qualities of the competition." (Hara, 1990, p. 90).

4.1.5 Presentation and analysis of the results of technical performance tests and accuracy of the skills of transmission and reception of volleyball transmission for the control and experimental research groups.

4.1.5.1Presentation and analysis of the results of technical performance tests and accuracy of the transmission and reception skills of volleyball transmission.

Table 12

Shows the arithmetic means, standard deviations and value (t) calculated between the pre- and post-tests of the technical performance and accuracy of the transmission and reception skills of the volleyball transmission of the control group.

Percentage of development	Moral significance	Calculated value (t)	Post-tests	Pre-tests	Statistical milestones

							auditions
			+ p	Going to-	+ p	Going to-	
33.96%	Moral	8.19	0.82	5.3	0.70	3.5	Technical performance of the transmission skill
4.21%	Moral	4.87	1.05	12.11	1.34	11.6	Transmission resolution
27.59%	Moral	6.27	0.78	5.8	0.78	4.2	Technical performance of the reception skill
31.6%	Moral	5.11	0.97	12.5	2.39	10.8	Transmitting reception resolution

Table (12) shows the arithmetic means, standard deviations, calculated (t) value and percentages of development between the pre- and post-tests for technical performance tests and accuracy of the transmission and reception skills of volleyball transmission of the control group, as the results showed that the values of (t) calculated between the pre- and post-tests of the technical performance and accuracy tests for the skills of transmission and reception of volleyball transmission are greater than the value of t)) Tabular adult (2.26) at the level of significance (0.05) and degree of freedom (9), which indicates the existence of significant differences between the tests before and after and in favor of the post-tests, as the results showed that the proportions favorable to the amount of development has reached the highest percentage of technical performance test for the skill of transmission volleyball has achieved a percentage of (33.96%) compared to the ratios favorable to tests of technical performance and accuracy of the skills of transmission and reception of volleyball transmission.

4.1.5.2 Presentation and analysis of the results of technical performance and accuracy tests for the skills of transmission and reception of volleyball transmissions of the experimental research group.

Table 13

Shows the arithmetic means, standard deviations and value (t) calculated between the pre- and post-tests of the technical performance and accuracy of the transmission and reception skills of volleyball transmission for the experimental group.

		Calculated t-value	Post-tests	Pre-tests	Statistical milestones

Favorable rate of development	Moral significance						auditions
			+ p	Going to-	+ p	Going to-	
43.66%	Moral	19.35	0.87	7.1	0.81	4	Technical performance of the transmission skill
40.59%	Moral	8.22	1.33	17	2.18	10.1	Transmission resolution
49.32%	Moral	16.53	1.15	7.3	1.33	3.7	Technical performance of the reception skill
28%	Moral	9.75	1.17	17.5	2.45	12.6	Transmitting reception resolution

Table (13) shows the arithmetic means, standard deviations, calculated (t) value and ratios favorable to the development between the pre- and post-tests for technical performance tests and accuracy for the skills of transmission and receiving volleyball transmission for the experimental group, as the results showed that the values of (t) calculated between the pre- and post-tests for technical performance and accuracy tests for the skills of sending and receiving volleyball transmissions are greater than the value of t)) Tabular (2.26) at the level of significance (0.05) and the degree of freedom (9), which indicates the existence of significant differences between the pre- and post-tests and in favor of the post-tests, as the results showed that the proportions favorable to the amount of development has reached the highest percentage of technical performance test for the skill (reception) receiving volleyball transmission has achieved a percentage of (49.32%) compared to the proportions of technical performance tests and accuracy of the skills of sending and receiving volleyball transmission.

4.1.5.3 Presentation and analysis of the results of differences in the post-tests of technical performance and accuracy of the skills of transmission and reception of volleyball transmission between the control and experimental research groups.

Table 14

Shows the arithmetic means, standard deviations and value (t) calculated in the post-tests between the control and experimental groups for technical performance and accuracy tests of the transmission and receiving skills of volleyball transmission.

		Experimental	Adjuster	Statistical milestones

Moral significance	Calculated t-value					auditions
		+ p	Going to-	+ p	Going to-	
Moral	4.15	0.87	7.1	0.82	5.3	Technical performance of the transmission skill
Moral	8.65	1.33	17	1.05	12.11	Transmission resolution
Moral	3.23	1.15	7.3	0.78	5.8	Technical performance of the reception skill
Moral	9.87	1.17	17.5	0.97	12.5	Transmitting reception resolution

Table (14) shows the arithmetic means and standard deviations and the value of (t) calculated in the post-tests between the control and experimental groups for technical performance and accuracy tests for the skills of transmission and reception of volleyball transmission, as the results showed that the values of (t) calculated between the post-tests of the control group and the post-tests of the experimental group for technical performance and accuracy tests of the skills of transmission and reception of volleyball transmission are greater than the value of t)) tabular of (2.10) at the level of significance (0.05) and degree of freedom (18), which indicates the existence of significant differences between the control and experimental groups and in favor of the experimental group.

4.1.5.4 Discuss the results of technical performance tests and its accuracy for the skills of transmission and reception of volleyball transmissions for the control and experimental groups.

Through the results presented in the tables (12,13,14) for tests of technical performance and accuracy of the skills of sending and receiving volleyball transmissions, the results showed that there are significant differences between the pre-tests and the post-tests for the tests under research and in favor of the post-tests and for both control and experimental groups, and the researcher attributes the reason for the emergence of these moral differences for the control group to the impact of the curriculum followed in the college to develop and develop technical disease and accuracy of the skills of sending and receiving volleyball transmission and its frequencies "Stochastic repetitive attempts are the important key to performance, which is to make unexpected movements predictable and timeable."(200, p63-645 Shmidet. R . A craig . Wrisberg), as shown by the value of t)) calculated for the values of arithmetic means and standard deviations between the pre-tests and

post-tests of the two research groups control and experimental tests of technical performance and accuracy tests for the skills of transmission and reception of volleyball transmission for the benefit of the experimental group and this is the result of the use of some training tools to develop technical performance and accuracy of the skills of transmission and reception of volleyball transmission because of its impact on the development of skill level and accuracy

For my skills under research, and since the use of training tools to develop and develop technical performance and accuracy of the skills of transmission and reception of transmission lead to ensure the kinetic path of the skill required to be learned, as these exercises contain part of the kinetic path of the skill and work in which a muscle or several muscles when performing the movement of competition, and the appropriateness of training tools used to develop my skills under research as they were characterized by sufficient comprehensiveness in terms of physical preparation and skill, which is consistent with the level of the research sample and their capabilities and capabilities, as well as the use of And the implementation of these training tools sequentially in learning, which led to enhancing the learning process and developing skill performance (technical performance and accuracy)

5- Conclusions and recommendations:

5.1 Conclusions:

1- The use of training tools has an impact and an active role in the development of technical performance and the accuracy of the performance of the skills of transmission and reception of volleyball transmissions

2- The diversity in the use of volleyball training tools helped to increase the motivation and enthusiasm of the players of the research sample.

3- The results of the research showed that the use of training tools led to a remarkable progress in the learning process through the development and motor transfer of the two skills under research.

5.2 Recommendations:

1- The need to use training tools within the vocabulary of educational units.

2- The need to use training tools in developing the technical performance and accuracy of the two skills under research in volleyball.

3- The need to urge coaches and workers in the field of physical education to choose the most important and best means during the learning or training process to develop various motor abilities and skill performance in volleyball

3- Trainers and teachers dealing with women should be aware of the nature and quality of exercise affecting menstrual functions and be prepared to adapt to possible changes in mood and regulate physical and psychological stress during learning or training.
4- The need to encourage researchers to conduct research and other studies that include broader samples and for different sports.

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