



CONSTRUCTING SKILL TESTS FOR VOLLEYBALL PLAYERS OF KIRKUK EDUCATION TEAM

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Abstract

Fourteen purposefully chosen students from the Kirkuk Education Team for the academic year 2022–2023 participated in the research. The General Directorate of Kirkuk Education's indoor sports facilities served as the study site. The objective was to ascertain which skill tests were developed to enhance skill performance in accordance with match rounds and to create skill tests that influence the degree of skill performance during matches. Seven factors—five of which were approved considering the requirements for accepting the factor to represent the skill tests for volleyball players—were determined by the relevance of the correlations between the eleven skill tests. Among these components are:

1. Defense of the court in its various forms.
2. Spiking in different directions.
3. Serving.
4. Receiving serves from various positions.
5. Setting.

Keywords: Skill Tests, Volleyball, Kirkuk Education Team

Introduction:

It is crucial for experts to make use of and implement the scientific developments that the world is currently experiencing, particularly around sports, to improve sports performance. The general public's interest in tests and measures as useful evaluation tools has grown in recent years. In physical education, tests and measurements play a critical role in developing the scientific, planned, and purposeful planning concepts that are the foundation of advanced sports theories in any given game or activity.

Because the individual is the primary emphasis of the training process, youth interest in team sports, especially volleyball, has been substantial. Teams and national selections are constructed mostly around this age range. The development of integrated skill performance is aided by skill tests, which are also crucial for their scientific implications in player selection, appropriateness, and future technical performance potential. These assessments are essential components of reaching advanced sports levels and obtaining high skill performance. As a result, volleyball players who have access to them have more opportunities to hone their technical skills, which is crucial for producing favorable outcomes and outperforming rival teams.

Research Problem:

The researcher is a physical education teacher at the General Directorate of Kirkuk Education. She has competed in multiple provincial school volleyball leagues. It was discovered that certain teams lacked the ability level required to get advanced results by looking at the skill levels of the participating teams and how these abilities showed up in their performances. This is despite possessing strong physical and tactical ability, which inspired the researcher to gauge volleyball players' skill levels.

As a result, the following questions are at the center of the current research problem:

1. What is the format of the skill tests' basic factorial structure?
2. Is the volleyball players' skill performance, as a dependent variable, constant for the course of a single match?



Research Objectives:

1. To determine which skill tests were created in accordance with match rounds to increase skill performance.
2. Developing skill assessments that influence the degree of skill execution during games.

Research Fields:

- Human Field: The Kirkuk Education Team volleyball players for the 2022–2023 school year.

Time Field: April 6, 2023, to February 2, 2023.

- Location Field: Kirkuk Education General Directorate's indoor sports halls.

Definition of Terms:

- Skill Tests: An objective technique that evaluates an athlete's technical proficiency, one of the most important success criteria, based on data gathered from observing the player's performance and the degree to which they execute different skills during contests. When measuring players becomes less accurate throughout a game, these tests are utilized in sports (Ziyad Tariq Suleiman: 2004).

Research Methodology and Procedures:

- study Method: Given the nature of the study problem, the researcher employed correlational techniques and the descriptive method in the survey.

- Research Population: For the academic year 2022–2023, the volleyball players on the Kirkuk Education Team were the population.

- Research Sample: Selected on purpose, the sample comprised fourteen students who represented the Kirkuk Education Team in the academic year 2022–2023.

- Data Collection Techniques: The investigator employed multiple techniques to gather the requisite data and information for the study, such as:

1. Examining scientific references and sources for content.
2. An expert and specialist questionnaire intended to identify the most crucial suggested skill assessments was distributed.
3. Skill testing.
4. Selecting a few skill assessments for the research.
5. To determine the competence assessments, the researcher examined the content of specialized scientific sources and references (15, 16, 17, 8).

Table 1: Skill Tests Identified by the Opinions of 10 Iraqi and Arab Experts and Specialists and Their Percentages

No.	Technical Skills	Number of Experts	Tests	Number of Agreeing Experts	Agreement Percentage
1	Serving	10	Serve from Overhand Tennis	10	100%
			Accuracy of Short Serve	10	100%
			Accuracy of Long Serve	9	90%
2	Serve Reception	10	Reception of Serve (1)	9	90%
			Accuracy of Serve Reception	10	100%
3	Setting	10	Wall Passing Repetition in 30s	10	100%



			Setting Close to the Net	8	80%
4	Spiking	10	Accuracy of Straight Spike	10	100%
			Accuracy of Diagonal Spike	10	100%
			Offensive Block Skill Test	10	100%
			Defensive Block Skill Test	10	100%

According to Table (1), the following skill tests seem to have met the necessary agreement percentage:

Survey of Experiments: For the school year 2022–2023, eight players from the Kirkuk Education Team participated in this project. The following was the definition of the experiment's goals:

1. The degree of sample individuals and the validity of the testing instruments.
2. How well the supporting staff uses the gadgets, how well test procedures are carried out, and how well results are recorded.
3. Establishing the test's date, time, and venue as well as the overall amount of time needed to complete each test.

The researcher observed several notes, including:

1. Suitability of tests for the sample level.
2. The tests were numerous and required time and effort regarding the sample or the assisting team. Therefore, precision and smoothness in applying these tests are necessary.
3. Distributing tests over days according to difficulty level, based on the opinions of experienced experts.

Statistical Methods:

- Percentage
- Mean
- Standard deviation
- Mode
- Pearson correlation coefficient
- Skewness coefficient
- Factor analysis using principal component analysis
- Multiple regression analysis using all regressions

Results were found with the assistance of statistical programs (SPSS, Excel).

Presentation and Discussion of Results:

Following the completion of data collection, relevant statistical techniques were applied to statistically process the data. Consequently, the findings will be presented and discussed in this part.

Construction of Skill Tests:

An explanation of volleyball players' skill assessments using statistics.

Table (2) makes it clear that there was moderation in the skill tests employed, since all skewness coefficients fell within (± 1). Additionally, all test mean values are greater than the standard deviation values, indicating that the tests are appropriate for the study population and that they are valid to be included in the correlation matrix that is being produced for factor analysis.



Table 2

No.	Variable Description	Variable Symbol	Unit of Measure	Mean	Standard Deviation	Norm
1	Overhead Wave Transmission Test (Tennis)	X1	Degrees	66.911	8.843	57.000
2	Short Transmission Accuracy	X2	Degrees	20.018	3.641	19.000
3	Long Transmission Accuracy	X3	Degrees	20.911	3.071	18.000
4	Transmission Reception (1)	X4	Degrees	28.893	3.671	30.000
5	Transmission Reception Accuracy	X5	Degrees	67.643	15.910	68.000
6	Wall Pass Repetition in 30 Seconds	X6	Degrees	26.000	4.835	24.000
7	Near Network Setup	X7	Number of Times	53.125	3.862	54.000
8	Straight Spike Accuracy	X8	Number of Times	33.464	4.604	31.000
9	Diagonal Spike Accuracy	X9	Degrees	19.786	4.048	20.000
10	Offensive Wall Block Skill Test	X10	Degrees	59.732	12.081	55.000
11	Defensive Wall Block Skill Test	X11	Degrees	156.196	18.060	185.00

- Factor analysis of skill exams for volleyball players.

- Factor eigenvalues, cumulative variance, and proportion of variance:

Table (4) reveals that three factors had eigenvalues higher than the right value. The acceptable range for the latent roots was found to be between 0.295 and 1.634, and the proportion of factor variance explained by these factors ranged from 1.555 to 8.599.

Table 3

Factor	Eigenvalues	Variance Proportion (%)	Cumulative Variance (%)
X 1	1.634	8.599	51.191
X 2	1.333	7.016	58.207
X 3	1.074	5.651	69.841
X 4	0.957	5.038	74.879
X 5	0.857	4.512	79.391
X 6	0.620	3.264	86.634
X 7	0.524	2.760	89.393
X 8	0.478	2.516	91.909
X 9	0.391	2.056	93.965
X 10	0.339	1.784	95.749
X 11	0.295	1.555	97.304

- **Interpretation of Factor 1:** Three tests pertaining to defensive skills have saturated this factor, according to Table (3), which shows the saturations of volleyball players' skill tests on Factor 1: backcourt defense,



position defense, and position defense. Furthermore, this component has also been saturated by two blocking skill tests, which are the defensive and offensive block tests. The exams with the highest saturations on this factor necessitate a variety of defensive talents, including position (5), position (6), and backcourt defense. This element might thus be referred to as the "Defense Factor in Its Various Forms." Height is not always necessary for defensive abilities; in fact, average and shorter players are more biomechanically adapted because of their lower center of gravity, which enables them to reach the ball faster and with quicker movements than taller players. The team may lose points as a direct result of any defensive blunder made during blocking. Inadequate defense can have an impact on the level of team preparedness. Because of the improved effectiveness and variety of blocking techniques, these talents have become more proficient, leading developed nations to look for novel defensive formations, such two- or three-player defenses, which help attackers execute good blocks. (Aqeel Abdullah, 1987)

Given that the test "Defending from position (6)" obtained the highest saturation on this factor, it is therefore recommended to include it in the battery of skill tests for volleyball players.

- Interpretation of Factor 2: Table (3), which presents the saturations of volleyball players' skill tests on Factor 2, makes it clear that, following orthogonal rotation using a variance-maximizing technique by ± 5 , the greatest number of skill tests had saturated this factor. This factor has reached saturation in three spiking skills tests. The tests with the highest saturations on this aspect necessitate different directions of spike skills. This element might therefore be referred to as the "Spike Factor in Different Directions." It is significant that this component is a main factor due to its clarity.

Strength in execution, quickness in approach, agility in jump, and direction precision define spike skills. When done properly, these are essential for winning and earning points. Players need to be agile, confident, have good decision-making skills, and have fast reactions to use these capabilities. (Taha, Ali Mustafa, 1999)

It is advised to include the test "Accuracy in diagonal and linear spikes" in the volleyball player's skill test battery because it achieved the maximum saturation on this factor.

- Interpretation of Factor 3: It is clear from Table (3), which presents the saturations of volleyball players' skill tests on Factor 3 that, following orthogonal rotation using a variance-maximizing approach by ± 5 , the greatest number of skill tests had saturated this factor. This component has been saturated by three serving skills tests. As a result, this component may be referred to as the "Serving Skill Factor." It is significant that this component is a main factor due to its clarity.

For a number of reasons, including being a direct offensive strike that can score points, making it more difficult for the opposition to successfully receive the ball, and, when practiced, offering safety for the serving team, serving skills are among the most crucial offensive strikes used by players during the game. Additionally, it makes it more difficult for the opposition to launch successful strikes. (Mohammed Saad and Mohammed Latif, 2001)

It is advised to add the test "Overhead serve with hands and forward movement, forcing the opponent to play the ball close to the player when serving from the jump (the floater)" to the volleyball player's battery of skill tests because it received the highest saturation on this factor.

- Interpretation of Factor 4: Table (3), which presents the saturations of volleyball players' skill tests on Factor 4, makes it clear that, following orthogonal rotation using a variance-maximizing technique by ± 5 , the greatest number of skill tests had saturated this factor. This element has been saturated by three receiving skills tests. This factor might therefore be referred to as "Reception of Serve Factor from Different Positions." It is significant that this component is a main factor due to its clarity.



Accepting the serve is essential since it is the starting point for the team's effective attack. Volleyball skills are interdependent, meaning that one skill depends on the other. Agility is needed to receive a serve since it calls for rapid execution and direction changes after the ball is received. (Ibrahim Ahmed, 2000)

When serving from the jump, the player must force the opponent to play the ball close to them, fix their hands to their chest, push the ball upward, and repeat this exercise repeatedly. They should also practice receiving the powerful serve from the jump and work on building their self-confidence when receiving it, as this skill calls for an elevated level of confidence from the player. (Saad Hammad Al-Jumaili, 1997).

- Interpretation of Factor 5:

It is clear from Table (3), which shows the saturations of volleyball players' skill tests on Factor 5 that, following orthogonal rotation using a variance-maximizing approach by ± 5 , the greatest number of skill tests had saturated this factor. This element has been saturated by three defensive skills tests. This component is therefore known as the "Preparation Skill Factor," and it is important to underline that because of its clarity, it is a main factor.

- Conclusions:

Through the significance of interrelationships (for skill tests consisting of fourteen skill tests), seven factors were identified, with five factors meeting acceptance criteria for representing volleyball players' skill tests, namely:

- Factor 1 (Defense in various forms).
- Factor 2 (Attack in various directions).
- Factor 3 (Service).
- Factor 4 (Reception from various positions).
- Factor 5 (Setting).

- Recommendations:

1. Conduct further studies on other variables (physical) to derive additional equations.
2. Conduct further studies on different age groups, players, and other sports activities.

Here is the translated text of the sources you provided:

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