

ANALYSIS OF THE EFFECTIVENESS OF OFFENSIVE SKILL PERFORMANCE ACCORDING TO A COMPUTER-BASED ANALYTICAL PROGRAM FOR PROFESSIONAL PLAYERS IN THE IRAQI VOLLEYBALL LEAGUE

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Abstract

The purpose of this paper is to analysis of the effectiveness of the skillful performance of professional players for the skill of serving with its two types (spiking serve from jumping - flutter serve from jumping), and analysis of the effectiveness of the skillful performance of the professional players for the spiking serve skill according to the hitting center inside the field (1,2,4). The researchers used the descriptive approach for its suitability in achieving the research objectives. The researchers identified the research community represented by the professional players who are present in the Iraqi volleyball league for the season Riyadh 2022-2023, and their number is 12 players distributed over four clubs (Al-Shorta, South Gas , Peshmerga, Erbil), and they represent the research sample by 100%. One of the most important results reached by the researcher is that : There is a weakness in the serve skill, both types of serve spiking and flutter, for professional club players , the effectiveness of spiking from the center (2) is better than spiking from the center (4) , and the variation in the effectiveness ratios of spiking from center (1) between one match and another based on the effectiveness of the opposing team. One of the most important recommendations recommended by the researchers is that: Training on accuracy, focus and speed in hitting the ball in serve spiking and fluttering to increase effectiveness, and introducing fun and suspense in training the types of serve as well as increasing motivation.

Keywords: Volleyball league. Offensive skill. Players.

Introduction

The great development that took place in sports, including the game of volleyball, made the developed countries resort to developing modern skillful methods in confronting the opposing team, because they are convinced that these skillful methods represent the most important aspect of the game in addition to the high physical fitness required by the game that must be paid attention to to a degree. It is large and high, and this makes it easier for the player or the team to know the offensive or defensive tactical aspects of the opposing team, and this skill development came through the use of modern scientific methods in measuring and analyzing the technical performance of the players during the matches, as the analysis during the matches gives more credibility than it does in training. Modern devices were used in photography, as well as the computer, which has become of great importance in the process of skill analysis for players.

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The skill level of the professional players in the game of volleyball gives an indication of the extent of the individual and collective skill progress of the team, and the method of analyzing matches using the computer is one of the latest methods that coaches resort to know the level of performance of their players and teams, address weaknesses and enhance strengths, which makes it easier for the coach to develop a plan and method of play suitable for each match and as a result of the delay in the level of volleyball in Iraq, we need to conduct an analysis of the technical skills of the professional players in order to know the weaknesses of the players and the team to raise the level of the technician and be on the right path in preparation and since serving and spiking are among the important and basic skills in winning the match from Here came the importance of the research in analyzing the effectiveness of offensive skill performance according to a computer analysis program on professional players in the Iraqi Premier League in volleyball.

Research Problem

The game of volleyball consists of many technical skills that are performed differently, but they must be interconnected and integrated in order to reach the high level. Reaching the higher and advanced levels requires a lot of research and analysis in order to stand on the technical level of the players and evaluate the effectiveness of the performance of the players and the team, and this requires Creating a scientific and advanced program that analyzes the team during the matches and records all the strengths and weaknesses of the team in order to raise the level of the team. Through the researchers' follow-up to the Iraqi Premier League matches in volleyball, they found that the clubs that brought in professional players there is a disparity in the level of these players, especially the level of performance of some offensive skills, and this The disparity affected negatively the results of the team, which led to a change in the sequence or the final arrangement of the Iraqi teams, where it is very important to know the level of these players and their role in their teams, and whether the skill level they have is commensurate with the amounts spent on them, and from here came the research problem in identifying the level of effectiveness the performance of these foreign players.

Research Objective

- Analysis of the effectiveness of the skillful performance of professional players for the skill of serving with its two types (spiking serve from jumping - flutter serve from jumping).

- Analysis of the effectiveness of the skillful performance of the professional players for the spiking serve skill according to the hitting center inside the field (1,2,4).

Skill (Service)

The (serving) is considered one of the technical skills of an offensive nature, as its importance is summarized as being the key to obtaining points for the team. A team whose players have strong and accurate serves has a great chance of winning the match, so every player must realize that serving is not just hitting the ball and making it fly over the net. But the skill (serving) must be mastered, and the ball must be sent to any point in the opposing team's court, taking into account the distance, height, and specific location, which prompts the opposite team in each serve to take a defensive position, and then the players can control the line The course of the match and its outcome, and after that winning the half or the match, and (serving) can also be defined as "Hit the ball with one hand or any part of the arm after it has been thrown or released from the hand, and before it touches any part of his body or the surface of the court." (Al-Kateb and Jabbar. 2001), it is one of the most important direct attack strikes that players use during the game, which may put the opposing team in a weak defensive position (Rennin Lid or. 1995), and by mastering the serve strikes, a quick and direct point can be scored for the serving team (Deborah W. 1995.), and that the expansion of the field of serving implementation to include all the base line encouraged the diversification and increase of the effectiveness of the method of implementing the serve , and the expansion of the possibility of planning (tactics). Likewise, (Zaghloul and Al-Sayed. 2001) mentioned the importance of the (serving) skill, as it is one of the most important offensive strikes that players use during the game for several reasons that cannot be overlooked, namely:

1. It is considered a direct offensive strike if its performance has been mastered, and a direct point is obtained from it.
2. It makes it difficult to receive the successful serve from the opposing team.
3. A means of safety for the sending team.
4. The difficulty of the task of the possibility of the opposing team to carry out effective offensive operations.

Skill (attack) in Volleyball

Spiking is one of the most important technical playing methods that players must master in order to obtain satisfactory results. A successful attack is the main goal for the team to move from reception or defense, while the main goal of the attack is to direct the ball through the net in a way or method that makes it difficult for the opponent. If he keeps the ball in play, he becomes unable to return it with an attack on his part, and usually (spiking) is the final touch of the team, which is: an attempt to end the circulation of the ball; by hitting the ball so that the opponent cannot return the ball, and the importance of (spiking) lies After him, the technical offensive skill that works to outperform the competing teams by obtaining points. And the success of the attack depends on good preparation, so whenever the prepared player is able to prepare the balls in a manner that is appropriate to the ability and ability of the attacking player, it will be possible to build an effective and effective attack, and (spiking) is one of the technical skills in volleyball, the powerful offensive weapon, and the final result For the efforts of the entire team, and the most influential and effective in outperforming the opposing teams in achieving winning matches by scoring points and taking possession of the serve (Karim. 1999).

And (spiking) is defined as "the technical and offensive skill in volleyball, as the player jumps and quickly hits the ball over the net to the opponent's court, in a legal manner" (Marion Y.L. Alexander . 1980).

Types of (spiking) in volleyball: (Khammas and et al., 2012)

- Spiking according to height (high-low-medium).
- Spiking according to the direction (diagonal - straight).
- Spiking according to the playing area (back area - front area).
- Spiking according to the position of the prepared player (in front of the prepared - behind the prepared)

Measuring skill level in matches

By observation, one person can watch each player perform all the skills, but it is not possible for him to watch all team members, and the skill level is also assessed by observation by counting the number of successful attempts for each team or for each player or calculating the number of attempts. The successful ones that led to a point, and through evaluation it is possible to know the skillful and physical of the team, and know the results of all teams, and compare them with each other, as well as knowing the weaknesses in order to avoid them and knowing the strengths to invest them to reach the best achievement.

Analysis in volleyball matches

Volleyball is considered one of the most games that use the system and method of analyzing the match. The way it is practiced gives a good opportunity to follow the match moment by moment, through follow-up evaluation, and by using known scoring methods, and some statistical methods to evaluate players (Hassanein, and Moneim. 1986).

The use of information and statistics extracted from statistical analysis helps to increase the effectiveness and motivation of the team members. When the player knows that his performance is recorded moment by moment, and that this can be easily retrieved through the analysis process, and it can be embodied in a way that allows accurate identification of it, negatively and positively, then this is it has a significant impact on increasing proficiency, which reflects on the player a realistic push for excellence and excellence (Allawi. 1994).

Methods of analyzing skills in volleyball matches:

There are many ways to analyze matches in volleyball (Taha. 1999),Such as:

1. Observation and virtual evaluation: This method is one of the easiest and least expensive methods used in analyzing matches in volleyball, and it requires the preparation of forms, especially since the aim of the analysis is to evaluate any skill, and it is distributed to the observers, and it is used for evaluation from both sides: skillful and tactical.
2. The flow method (graph): This method is inexpensive and easy to implement. It is useful for analyzing the team's lines, playing positions, attack and defense method, and the course of the match, the direction of hitting and serve. This method uses a card that is a record of a graph paper.
3. The film and video method: This method requires expensive tools and costs, and requires a long period of time for analysis. The tools must be prepared in advance, and the location of the camera should be chosen. However, it is an objective, scientific and useful method for the trainer from the technical and tactical sides.
4. Statistical analysis method using (computer): This method is used

in tournaments for the purpose of extracting results for the team, calculating the error percentage for each player, as well as knowing the rotation errors as well as calculating points, conducting analysis by slowly replaying movement, and conducting analysis for each type of skill.

Whatever the method used in analyzing the match, choosing the best method depends on several important considerations, including: (Hassanein, and Moneim .1997)

- The objective of conducting the analysis process.
- The cases to be monitored, corrected, and subjected to registration and study.
- The number of observations of value to be followed up.
- The volume and type of information and knowledge to be obtained.
- The efficiency of the equipment, tools and capabilities available for use.
- The number of individuals subject to the analysis process.
- The efficiency of those involved in the analysis process

Statistical Programs Used in Volleyball

First program: a program (Volleyball information system) (VIS) (WWW. Fivb.org)

The International Volleyball Federation (FIVB) has developed the (VIS) volleyball information system over the past years, as the (VIS) program is used to manage results during the FIVB tournaments, and the main purpose of the VIS program is to give results and statistics on teams and players To the national and international media, as well as to analyze the results of individual players, and for the development of the VIS program, the International Federation designed reports, especially in order to give a clear picture of these results to the teams and players, and the VIS system also prepares ready data for the press and media in order to display it the International Federation is aware of the fact that the (VIS) system is one of the global programs developed to provide all media, experts, teachers and researchers in the field of volleyball with matches, results and statistics. Through these procedures, we are confident that the volleyball game will succeed if the press and the public are informed of what happens during the match, as well as if the audience expects what happens during the match, and we, as an international federation, try to make the audience understand what happens during the match, as we must analyze in order to we understand.

Programs Designed by International Federations and International Trainers

Among these programs is the (data volley) program (www.dataproject.com) : It is the famous Italian program that specializes in teams and players, finding appropriate solutions, filling gaps, and developing players' skills and it has the possibility of merging the video with the analysis, and giving each player the videotape to identify the mistakes or defects that he made after the match, as it is an interesting program, and it contains a lot of techniques.

Research Methodology and Field Procedures

Research Methodology

The researchers used the descriptive approach for its suitability in achieving the research objectives.

Community and Sample Research

The researchers identified the research community represented by the professional players who are present in the Iraqi volleyball league for the season Riyadh 2022-2023, and their number is 12 players distributed over four clubs (Al-Shorta, South Gas, Peshmerga, Erbil), and they represent the research sample by 100%.

Tools and devices used in the research

- Arab and foreign sources.
- The analytical program (click & scout) from (www.datavolley.com)
- Dell electronic calculator
- Camera type (Sony 8M)
- Imation CD

Exploratory experience

The researchers conducted an exploratory experiment on 1/11/2022 on

the professionals who are with Al-Bahri Club and who are outside the main research sample, and it aimed at the following:

- Diagnose the obstacles and negatives that the researcher encounters when conducting and implementing the main experiment.
- The ability of the researcher to use the analysis method inside the electronic calculator.
- The validity of the form for extracting the results.
- The accuracy of the researcher and his ability to quickly record and enter information.
- Ensure that the filming location is appropriate for the purpose of recording the numbers of the players and the skill performed by the players

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

- Arithmetic mean.
- Percentage
- Standard Deviation.
- Simple Correlation Coefficient (Pearson).
- Degree of effectiveness

$$\text{Efficiency ratio} = \frac{\text{Degree of effectiveness}}{\text{total number pf skill X highest effectiveness score}} \times 100\%$$

Results and Discussion

Presentation, analysis and discussion of the results of the level of effectiveness of serve spiking by jumping according to the skill levels of the professional players of the four clubs (Table 1).

The researchers showed, through table 1, the emergence of low or low effectiveness rates for the (South Gas, Erbil, Al-Shorta, Peshmerga) matches. With regard to the spiking serve from the jump and the professional players who performed this type of serve, this serve did not have a good effect or morale on the receiving players from the other four teams. The researchers attribute the reason for this weakness to the lack of accuracy and correct focus in performing this serve, so the exercises should focus on using serve in a focused manner. And with a high hitting speed and hitting the ball straight and strong and directed at a specific player or between two players or in the void points or on a player with poor reception where the researchers advise when training this type of serve which is considered one of the closed skills that depend on the technical for the player only to train Consistently and trying

to isolate the player from external influences when performing the serve as well as follow the method of gradation and repeat the exercise according to different playing positions, where the player must stay away from the libero if he is good when performing serve spiking from jumping . As mentions, "The goal of serve is to try to score a point" (Zaid. 1997) The researcher agrees with this opinion that the serve skill is an effective offensive skill from the tactical, technical and psychological side, especially after the advanced teams use spikes serve with jump) most of the match times.

Presentation, analysis and discussion of the results of the level of effectiveness of the flutter by jumping according to the skill levels of the professional players of the four clubs (Table 2):

The researchers showed through table 2 the emergence of low or low effectiveness rates in relation to the skillful performance of the flutter from jumping in the matches of the four clubs (Al-Shorta, South Gas , Peshmerga, Erbil).

Where the number of players who use this type of serve reached (8) players, and the researchers attribute the reason for this weakness to that in and also the prevailing thinking among professional players when the points converge between the two teams or reaching the last points of the half in that this skill is just crossing the ball Above the net, where the player must take into account the performance of the serve flutter by jumping the distance, height, and the specified place, as well as trying to play the ball on the player who is weak in reception skill or a position player (4). As for the South Gas match with Erbil, it was a good effectiveness, as it reached (63,7) where it is considered a good ratio when compared to the effectiveness of the serve skill with other matches, and the researchers attribute the reason for the appearance of this good ratio to the weakness of the reception skill of the South Gas team, in addition to the high level of effectiveness of the serve skill for the Erbil club players, and the researchers advise when training The serve skill by introducing the factor of fun and suspense in performing serve exercises, as well as increasing motivation in the exercise, and also that the average age of the national team players is appropriate in the speed of learning and training on these skills, and also giving seriousness in the serve exercises, as the focus is on performing the exercises seriously , The interest in increasing the variety of exercises according to different patterns of feedback, commitment and diversification in performance helps to develop the spiking and mastering skill. (Shams Hikmat Mahdi R. 2019) , Likewise, the specifications of the technical performance of the skill of the front and back spiking strikes are similar in terms of increased flexion in the joints of the body, especially the knee joint (Youssef T. P. 2019).

Presentation, analysis and discussion of the results of the level of effectiveness of spiking center (2) according to the skill levels of the professional players of the four clubs (Table 3):

Table 1: Shows the results of the level of effectiveness of serve spiking by jumping.

| Serve Spiking skill levels | | | | | | | |
|----------------------------|--------|------|----|----|---|---|------------------|
| Skill Efficiency Ratio | | | | | | | |
| serve spiking with jump | levels | Zero | 1 | 2 | 3 | 4 | Efficiency Ratio |
| South Gas | | 5 | 10 | 12 | 2 | 1 | 36.6% |
| Erbil | | 4 | 8 | 7 | 1 | 2 | 45.8% |
| Peshmerga | | 7 | 13 | 6 | 4 | 2 | 35.17% |
| Al-Shorta | | 6 | 4 | 1 | 2 | 1 | 28.6% |

Table 2: Shows the efficiency ratio of the flutter jump serve.

| flutter jump serve skill levels | | | | | | | |
|---------------------------------|--------|------|----|----|----|---|------------------|
| Efficiency Ratio Skill | | | | | | | |
| flutter jump serve | levels | Zero | 1 | 2 | 3 | 4 | Efficiency Ratio |
| South Gas | | 11 | 29 | 20 | 12 | 8 | 44.6% |
| Erbil | | 5 | 8 | 7 | 1 | 6 | 63.7% |
| Peshmerga | | 9 | 21 | 5 | 2 | 4 | 32.3% |
| Al-Shorta | | 7 | 11 | 6 | - | 2 | 27.8% |

Table 3: Shows the percentage of effectiveness for hitting center spiking (2).

| spiking serve skill levels | | | | | | | |
|-------------------------------|--------|------|---|---|---|----|------------------|
| Efficiency Ratio for center 2 | | | | | | | |
| spiking serve | levels | Zero | 1 | 2 | 3 | 4 | Efficiency Ratio |
| South Gas | | 4 | 2 | 5 | 4 | 13 | 67% |
| Erbil | | 3 | 2 | 7 | 2 | 12 | 67.3% |
| Peshmerga | | 6 | 3 | 1 | 1 | 12 | 60.8% |
| Al-Shorta | | 1 | 2 | 1 | - | 6 | 70% |

Table 4: Shows the percentage of effectiveness for hitting center spiking (4).

| spiking serve skill levels | | | | | | | |
|-------------------------------|-----------|------|---|---|---|----|------------------|
| Efficiency Ratio for center 4 | | | | | | | |
| spiking serve | levels | Zero | 1 | 2 | 3 | 4 | Efficiency Ratio |
| | South Gas | 7 | 1 | 2 | 3 | 18 | 69.3% |
| | Erbil | 5 | 1 | 1 | 3 | 13 | 69.5% |
| | Peshmerga | 15 | 2 | - | 1 | 8 | 35.5% |
| | Al-Shorta | 4 | 1 | 1 | 2 | 9 | 46% |

Table 5: Shows the effectiveness percentage of hitting center (1) for the professional players of the four clubs.

| spiking serve skill levels | | | | | | | |
|-------------------------------|-----------|------|---|---|---|----|------------------|
| Efficiency Ratio for center 1 | | | | | | | |
| spiking serve | levels | Zero | 1 | 2 | 3 | 4 | Efficiency Ratio |
| | South Gas | 1 | 2 | - | 3 | 12 | 81% |
| | Erbil | 2 | 1 | 3 | 4 | 11 | 75% |
| | Peshmerga | 4 | 1 | - | 2 | 6 | 59.6% |
| | Al-Shorta | 8 | 2 | 4 | - | 6 | 42.5% |

The researchers showed through table 3 the emergence of good moral percentages for the skill of spiking from center (2), and the researcher attributes the reason for the appearance of these good percentages to the fact that the player of position (2) always when he performs the skill of spiking, he has a blocking wall consisting of one player in front of him Only or rarely has two players in front of him, and the reason for this is due to the difficulty of movement by the anchor player of the opposing team who is in the center (3) and then moves to the center (4) where when the reception is good and the equipment has the ability to prepare the anchor players and For high spiking players, the movement of the pivot player is slow or difficult to a position (4), so when a center player (2) is characterized by the speed of hitting and the ability to change the direction of spiking, he has an effective rate in scoring more points than other players of other positions, so it requires One of the players of this center is characterized by height and high explosive power in order to be fast, and this comes through the duration of practice that increases the improvement and development of accuracy in skills for all basic skills in volleyball (jensy GR and Fisher . 1979).

Presenting, analyzing and discussing the results of the level of effectiveness of the spiking center (4) according to the skill levels of the professional players of the four clubs (Table 4):

The researchers showed through table 4 the emergence of good moral percentages with regard to the level of performance of the spiking skill from center (4) in the clubs (Ghas al-Janoub, Erbil), where the players of Ghaz al-Janoub have professional players of position (4) with physical, skillful, tactical and They are distinguished by strength in execution, speed in approaching, agility in jumping, and accuracy in guidance. In addition, the players of Center (4) have good experience in terms of outgoing posts.

As for the matches of (Peshmerga and Al-Shorta) clubs, the results showed that there were low or weak effectiveness rates in the skill of spiking from center (4). Good behavior during the match, dealing with the ball, and also behavior when the preparation level is far from the net and when it is also close, dealing with the high and low blocking wall, dealing with empty points in the opposing team's court, how to act and positioning the back line players of the opposing team Where the players of the clubs (Peshmerga, Al-Shorta) were characterized by defense, good coverage and correct positioning.

Presentation, analysis and discussion of the results of the effectiveness level of spiking center (1) according to skill levels (Table 5):

The researchers showed, through table 5, the emergence of good performance effectiveness ratios for the skill of spiking from center (1) in the clubs (South Gas , Erbil), and the researchers attribute the reason for the emergence of these good ratios to the presence of a center player (1) with high skill and physical characteristics Where the center hitter (1) must understand the importance of spiking in scoring more points than the rest of the skills, as this player is called the player (opposite) i.e. the player who is the opposite of the equipment in the turnover paper and that the majority of the balls prepared for the attack are for him and he is a player It does not receive serve, that is, it has the greatest weight in the process of scoring points if it is implemented correctly. In the clubs (Peshmerga, Al-Shorta), little or low performance appeared due to the presence of a very good blocking wall for the Libyan team, as well as the discrepancy in the skill and tactical level between our team And the Tunisian national team did not show a good effectiveness for the back line player from position (1) during those two matches, and also the Al-Shorta team was distinguished by good defense and a good libero that was able to defend

all the attacking strikes of the position player (1) The overwhelming hitting skill requires high speed in performance and accuracy in execution, due to its variables being reduced at one time (Jawad A. F., & Azab p. p. 2021), and it is one of the skills that increase the excitement, suspense, and enthusiasm of the players and the audience, as well as it gives the players a competitive character (Jawad A. F., & Azab p. p. 2021).

Conclusions and Recommendations

Conclusions

- There is a weakness in the serve skill, both types of serve spiking and flutter, for professional club players.
- The effectiveness of spiking from the center (2) is better than spiking from the center (4).
- The variation in the effectiveness ratios of spiking from center (1) between one match and another based on the effectiveness of the opposing team.

Recommendations

- Training on accuracy, focus and speed in hitting the ball in serve spiking and fluttering to increase effectiveness.
- Introducing fun and suspense in training the types of serve as well as increasing motivation.
- Increasing friendly matches with high-level teams in order to develop the skill level of the players.

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