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IMPACT OF THE PERCEPTUAL LEARNING BY SIMULATION ON DECISION-MAKING IN VOLLEY BALL

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Abstract:
The objective of this study is to approach the decision-making process in volley ball through the perceptual learning by simulation. 148 pupils took part voluntarily to this experience. The pupils were divided into two groups. An Experimental Group (EG) which was to follow a program of learning of the technics of the Volley Ball on computer (Images in 3D) before they begin the learning and a Control Group (CG) who performed the classical learning through technical exercises. Tests have been realized after a period of learning on different technics of volleyball. The results showed that the group experimental had significantly improved these results during the decision-making. This study shows the need to use the new technology (simulation) to optimize the mental skills in teaching volleyball.

Keywords: perceptual learning; decision making; simulation; volley ball

1. Introduction

Factors of success in sports require adopting the correct scientific method that achieves what is needed by specialists including trainers or teachers. This is in order to reach the best results. Volleyball is considered one of the games that need research, study, analysis and evaluation as this game is characterized by high level of technical performance of skills. Lately, there was a notable development in this game which asserts the concern of trainers and researchers in the use and development of means of

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measurement and evaluation for the purpose of identifying status and condition of players or learners. In order to prepare training or educational programs based on the results of measurement and evaluation to raise performance level from psychological and physical skills.

Volleyball is considered one of the forms of ball games which are characterized by dynamism and thrill which give it a special nature that differs from other team games. This is evident in the way of using the ball through a set of various and different skills. In addition, volleyball has its basic various principles that depend on mastering and raising their levels on optimal achievement level. This is done by adopting the right methods of teaching, learning and training with the choice of the latest among them. A lot of specialists in volleyball workers (trainers. teachers or academics this game) in their studies and researches agreed that the success of any team in volleyball is determined to a great extent by the degree of mastering the game's basic principles of skills (Al Bek, 1984: p. 122).

However, this success cannot be reached except for mastering total complex mental skills that are considered as essential in tactical strategies in volleyball. Among these mental skills, there is decision making skill which is considered the core of achieving results in performance. So this mental skill should have important and great concern of teachers, trainers and players themselves. This is done only through intensifying exercises which include various mental skills and develop them in order to reach a high degree of distinction, accuracy and consistency. In addition, volleyball is one of the team sports that are characterized by continuous observation of situations, continuous concentration and preparation for decision making suitable in acting at any time.

The nature of this game also makes it as a scenario which is full of continuous events and changes. This encourages us to use total mental and physical abilities to cope with these changes through good and right employment of these abilities in order to reach a good level of playing and competition (Ali, 2004: p. 12).

2. Problem of the Study

There is no doubt that the importance and effectiveness of basic skills in volleyball represent the main base for effective performance and achieving good results. Evaluation of these skills is a helping aspect, so decision making is very important in individual's educational process if connected with volleyball as it is one of the games which requires great mental and movement concentration. Significance of the study comes in determining the performance of some important and effective skills in skilled and technical performance of this game. The tactic which builds aesthetics of this game

is built if the game is connected with decision making and showing the level of this skill for learners. It is the decision making which makes teachers able to determine optimal way and pattern of raising the game's level and considering points of strength and weaknesses in preparing teaching programs. Individuals are characterized by individual differences and attributes. Therefore, physical education teachers are suffering from some problems when they evaluate their demand or players. Among them, there are those who believe that they know their students well and able to evaluate them this is based on many impressions formed by improvised scenes, but this knowledge and experience is not different from other scientific methods of evaluation. from researcher works in the sport field and good watchers of volleyball, we notice that most teachers focus on skilled performance, ignore mental aspect or they lack experience in this field especially when it comes to mental skills including decision making skill which is considered one of the updated and modern terms which tackles optimal mental ability of learners in an accurate way for good preparation, exert efforts and excel in competition. Therefore, the researcher studies the level of decision making in serving, reception and preparation skills by posing the following essential question: What is the level of decision making in some volleyball skills for secondary stage for secondary school students?

3. Methodology

3.1 Field Procedures of the Study

The researcher used the descriptive approach with a survey as it is suitable to the nature of the study.

3.2 Sample of the Study

The sample of the study consisted of 148 students (7% of original population which is 2279 students).

3.3 Fields of the Study

- **Human Field:** This study included students of the 2nd secondary grade for some secondary schools of Mostaganem city (Algéria).
- **Temporal Field:** The study started from 20/01- 20/02/2014.
- **Spatial Field:** This study was applied in the volleyball playground at all secondary schools.

3.4 The Tools of the Study

- Arabic & foreign references and sources.

- A computer device including the electronic program.
- Scientific observation.
- Skill tests.

3.5 The Used Devices

Volleyball hall, volleyballs, volleyball net, measuring bands, measuring watches and assistant crew.

3.6 The Used Tests

The researcher designed a form concerned with basic skills and determined the most important tests that measure the accuracy of these skills. After presenting the form to a group of experts, the most important of these tests were determined as shown in table (1). All tests were taken from the book of scientific basics of volleyball, measuring and testing methods. (Al Moneim, 1997).

Serial	Skill	Proposed test	Purpose of the study
1	Serving	Test. 1: long serve accuracy	Measuring long serve accuracy
		Test 2: hard points serve accuracy	Measuring specific hard points serve accuracy
2	Serving	Test. 1: serve reception test (1)	Measuring player's skill in serve reception
		Test 2: serve reception test (2)	Measuring player's skill in serve reception
3	Serving	Test 1: test of preparation close to net	Measuring preparation close to net accuracy
		Test 2: test of preparation from above with fingers	Measuring readiness of the tested in close preparation skill

Table 1: Basic Skills of Volleyball and the most important tests chosen by expert

3.7 The Electronic Program

The used program was a test of decision making skill using simulation of playing postures in volleyball using computer program called "Super Lab (Version 4.04)". It presents images as visual attention for choice. This programming presents pictures and records which answer the searching and timing experiments used on the computer. A set of images used representing different playing positions in volleyball chosen by a group of referees and then they were presented to the samples of the study (96 3D pictures) ordered according to the name and number used in lottery. The informants answered correctly and quickly balls during the presentation of pictures on the computer screen to answer them through choosing the correct decision.

3.8 Test Design

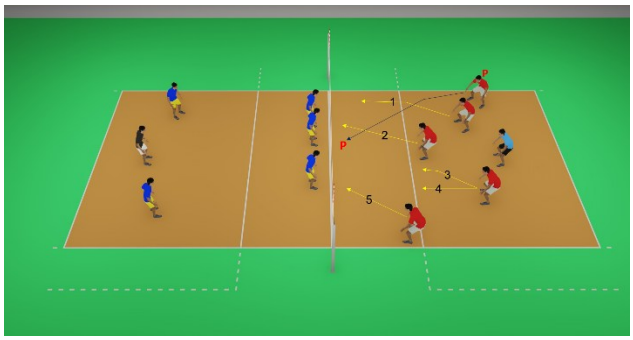
The sample of the study was put before the computer screen, pictures of different positions were presented in the previously discussed playing cases and then they choose decisions in each case in good and quick answers by using the correct playing position (each playing position has five choices to choose "from 1 to 5"). Each attempt was made as follows: preparation signal (!): 1500 ml / second showing the picture of a certain playing position and followed by the correct chosen picture after pressing any of the five buttons (1, 2, 3, 4, 5) by your index finger.

Pictures presentation before the tested respondents:

1500ms on the screen

!

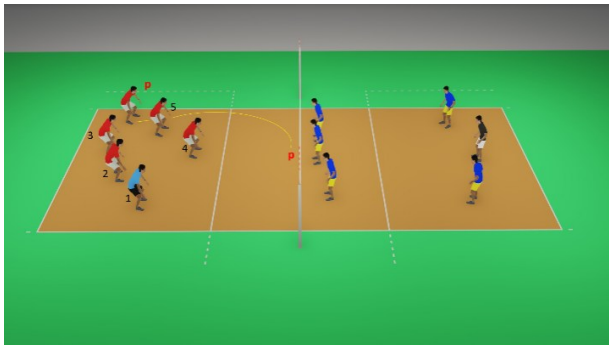
Still on the screen till the answer



1500ms on the screen

!

Still on the screen till the answer



3.9 Exploratory Trial

After the researcher determined the most important basic attacking skills which are related to the proposed tests, he performed the exploratory trial on 01/01/2014 on a sample of second secondary stage students among those who are not included by the

main exploratory trial (10 students). The aim of this trial was to identify the difficulties which may face the researcher during the performance of tests and the efficiency of the assistant working team and the lasted time to execute these tests.

3.10 Scientific Bases of the Tests

A. Test-Retest (Reliability)

Test reliability is known as giving the same results if repeated on the same persons and under the same conditions. The researcher conducted tests and re-performed them on an exploratory sample of 8 players out of the sample of the study.

B. Test Validity

It means correct testing of what was measured (Mokaddem, 1993: p. 146). In order to ensure test validity, the researcher used self-validity which is measured by counting the square root of test reliability coefficient: self-validity = reliability coefficient

Serial	Test items	Reliability	Significance	Validity
1	Serving	***0.87***	***0.05***	***0.93***
2	Reception	***0.91***		***0.95***
3	Preparation	***0.95***		***0.97***
4	Decision-making	***0.85***		***0.92***

Table 2: Reliability and Validity Coefficients of the Test

Table (2) shows that all items of the test gave results with high reliability and validity as we recorded statistically significant correlations in all tests at significant level of 0.05 which asserts success in measuring the study variables.

C. Objectivity

Tests of the study are the most objective proper for the sample of the study and volleyball, they are derived from prior studies, Arabic, and foreign references asserting their importance and objectivity. They were chosen on their effectiveness base, easy application and result validity.

3.11 Statistical Study

The researcher used arithmetic means. Standard deviation, contrast analysis, good compatibility testing and percentage as shown in table (3).

4. Discussion of Results

4.1 First Hypothesis

There are statistically significant differences between decision making and some volleyball skills (serving, receiving and preparing).

4. 2 Second Hypothesis

There is a low decision making level for secondary stage students in serving, receiving and preparing skills.

Tests		Category no.	Mean	S.D	F Counted	F Tabulate	Significance level	Significance
Serving	Test 1	148	27.1	11.82		3.06	3.05	Significant
	Test 2		18.8	3.6				
	Decision making		12.35	3.84				
Reception	Test 1		27.25	7.5	5.94			Significant
	Test 2		26.15	6.45				
	Decision making		7.85	2.79				
Preparation	Test 1		27	7.40	4.46			Significant
	Test 2		26.4	6.70				
	Decision making		7.85	2.79				
Total decision making	Good	18	12.16%					
	Average	40	27.02%					
	Weak	90	60.81%					

Table 3: A. Means, Standard deviations, F test of decision making tests in some volleyball skills (serving, reception and preparation)

In table (3) which shows results of decision making tests in some volleyball skills, we notice that the means of serving, reception and preparation are as follows: Serving: (12.35 / 18.8 / 27.1), reception: (7.85 / 26.15 / 27.25) and preparation: (7.8 / 26.4 / 4.27) and with standard deviations as follows: serving: (3.84 / 3.6 / 11.82), reception: (2.79 / 6.45 / 7.5) and preparation: (2.79 / 6.7 / 7.4).

Accordingly, there are statistically significant differences between decision making level and some volleyball skills as the F counted values for (serving, reception and preparation) were (4.46 / 5.94 / 3.80) which are better than the tabulated one (3.06) under significance level (0.05).

Decision Making through the table which shows results of decision making tests in some volleyball skills, we notice that there were statistically significant differences between decision making levels (good, average and weak) with percentages at all decision making levels ((good, average and weak) as: (12.16 / 27.02 / 60.81), so they achieved the hypothesis which says that decision making level is low at each skill (serving, receiving and preparing). Results reflected a clear weakness in responding decision making as well as their poor performance in volleyball skills performance which asserts that they need a follow-up and develop mental skills. Students who use their mental skills well will reflect positively in using their basic volleyball skills which means that skilled performance is connected to abilities. Rayan, 1971 found that the physical and skill conditions do not only express general level of players, but what we need to know is the degree of mental recognition accuracy in their abilities and potentials. Sakhi, 2006 found that continuous use of mental skills training is as important as training on using physical and skill abilities, which means that performing skills with high level leads to increase muscular and nervous compatibility, movement control and good skill performance.

The researcher found that lower levels of decision making skill for the sample of the study is due to the educational content; which is almost empty; of training related to develop mental abilities of students. It can be said that the best results that can be reached through good execution of basic skills should be related to the student's ability to use his/her mental potentials, especially decision-making which is based on good expectation and timing and ability to follow the ball.

Through results of the study, the researcher reached some results as follows:

- There are statistically significant differences between decision making and some volleyball skills.
- There are statistically significant differences between total decision making levels.
- Sample of the study has a low decision making level.
- Most individuals of the sample are at weak level.

5. Discussion

Through statistical treatment of the study; results and results at above tables, said that:

5.1 Discussing Results of the First Hypothesis

The researcher proposed that there are statistically significant differences between decision making and some volleyball skills. This was found in table (3) as it showed statistically significant differences between decision making and some volleyball skills (serving, receiving and preparing). The researcher found that these differences are due to lack of experience and practice in students performing skills as well as lack of mental and cognitive maturity. Each skill needs repeat physical training in addition to mental skills. Skills in general need from learners high and successful consistency and perception and they need also high degree of accuracy, attention, intelligence and recognition.

5.2 Discussing Results of the Second Hypothesis

Results in table (3) showed low decision making level for students in (serving, receiving and preparing) skills. The researcher found that most respondents of the sample were at weak and average levels due to the difficulty of this mental skill which needs high consistency between concentration, speed and accuracy in performance. Decision making is one of the most important abilities of players in higher sport levels. Its success depended on basic factors such as information speed, accuracy, and level of activity, knowledge, skills and prior experiences which are not found in the sample of the study. Fathy (2008) referred that skill creative abilities through the ability to take suitable decisions with experience represented in repetition.

6. Recommendations

- Asserting the use of various teaching methods based on a modern technic that makes the teacher's role effective in educational process.
- Performing periodical and continuous tests of mental abilities of students with the aim of identifying their reality and their work on developing these abilities.
- Performing similar researches on students for the other volleyball skills and other sport games' skills to know the importance of decision making on different sport events.
- The necessity of making teachers aware how to develop variables of decision making skill for sport movements through practical experiences using different senses.

References

1. Khater, A. & El Bek, A. F. (1984). Measurement in Spor; Cairo, Dar Al Fikr; Egypt
2. Fathy, J. (2008). Talent, Distinction and Creativity, Amman, Jordan, Dar Al Fikr.
3. Sakhy, H. S. (20006). The Effect of a Training Method to Develop the Time of Accuracy, Expectation and Motor Response in Accuracy of some basic Skills of Young Volleyball Players", Baghdad. Dar el Kitab.
4. Hassan, Z., Ali, E. A. M. (2004). Center of Controlling Team Sports, the Egyptian Library.
5. Al Garaan, A. A. (2003). The Effect of an Educational Center based on Sternberg Theory to Enhance Decision Making Level for the First Secondary Grade Students, Amman. Jordan, Dar Al Chorouk.
6. Mokadem, A. (1993). Statistics, Psychological and Educational Measurement, Algeria: University Publishing Authority.
7. Hassanein, M. S. & Abdelmoneim, H. (1997). Scientific Principles of Volleyball and Measuring and Evaluating Methods", Cairo, The Book Center Press.
8. Al Hawary, M. (2011). The Relation between Emotional Intelligence and Decision Making for Moata University Student, Jordan. Dar Al Maaref.
9. Holt, N. & Sparkes, A. (2001). An ethnographic study of cohesiveness in a college soccer team over a season. The sport psychologist, (15) p237-259.
10. Ryan, A, J (1991). The limits of human performance in New York, San Francisco, London, Awadernic press, 1991, p58.