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Measuring visual-motor synergy using the Vienna system and its relationship in performing peaceful shooting of basketball youth

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Abstract

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The aim of the research is to measure visual-motor synergy using the Vienna system and find its relationship in the performance of peaceful correction of basketball youth. The researcher used the descriptive approach in the method of correlational studies. The researcher identified the research sample with the emerging players of Shahrban Club, which number (38) players , and the researcher used the Vienna global test system to measure visual-motor synergy, and the skill test was determined by the peaceful correction test. The researcher applied the two tests within the main experiment on Sunday and Monday, 11-12/2/2024, and through the results of the research , it was found to the researcher that there is a direct correlation between visual-motor synergy and peaceful correction in the research sample.

1- Introduction: The development in sports sciences in all its branches, including testing and measurement, which has received the attention of researchers seriously , which made sports teams in all their team and individual names to achieve remarkable achievements and development in most countries of the world , as this achievement came through the results of scientific research that studies many topics, including measurement and mathematical testing, because measurement and testing give real results through which the physical and skill performance of emerging players is addressed and developed.

Visual-motor synergy is a common process between the sense of sight and the hand. Young people have adopted visual-motor processes together to accomplish many tasks such as drawing, writing and performing sports skills. Therefore, weakness in this process , for any reason, will affect the performance of visual-motor skills and weaken them. Therefore, it affects practical educational activities and the implementation of skill tasks, and this is part of the problems that require the search for solutions to them , in order to develop the skill performance of emerging players.

Most studies and research emphasize the need to pay attention to young people and develop them to take the best and optimal position in sports teams. In this regard, we must pay attention to the issue of the level of successful performance of these people and put them under the supervision of the best coaches and teach them the most important skills in the game they play. The researcher chose one of these games, which is basketball, which is one of the team games practiced by many young people because of its pleasure in performance, competition and the pleasure of watching it by the public .

"The game of basketball has the greatest reliance on offensive skills, and one of these skills is the skill of peaceful correction, which has a great role in deciding basketball matches.
" In light of the above, offensive skills are the skills of competition that must be taken care of by coaches because they are one of the factors affecting good skill performance that ensures the success of all movements and under the various circumstances facing the player during the competition." (1)

(1) Hashim Ahmed Suleiman; **Forecasting the level of skill performance in terms of physical performance and physical measurements of young basketball players aged**

In competence." (2) **The importance of the research lies** in the visual-motor synergy as it is one of the important variables in the performance of life and educational skills, and that any defect in it , whether genetic or acquired from the environment or as a result of accidents, will affect the performance of the youngster, and the skill of shooting is one of the most important offensive skills in the game of basketball, which plays a crucial role in the victory and loss of teams because of its great importance in matches. This skill needs a high flow of performance in order to reach the achievement of points , "The importance of this skill is clear and influential, as it is often decided by the result of matches and the fluctuation of play scales, so it must be trained continuously and in almost every training unit." (3)

2-The research problem: By informing the researcher in his field of specialization , it was found that the emerging players in basketball are still failing in the peaceful correction, and to find solutions to identify the reasons for this failure during the games, the researcher decided to measure the visual-motor synergy using the Vienna system andfind its relationship in the performance of the peaceful correction of basketball youth.

order to determine the skill status of players, tests and measurements should be used because they are the appropriate means to know the level of skill of the player. The use of measurement and testing is the important pillar on which physical education is based, as its dimensions are derived from being a tool for evaluation and guidance. Measurement in basketball determines how much players enjoy by determining the values of quantity or how their levels are expressed in the skill areas of basketball. "Tests are an important part of establishing certain foundations for evaluating physical and skill

3- Research Objective: Measuring visual-motor synergy using the Vienna system andfinding its relationship in performing peaceful shooting of basketball youth.

(14-16) years . PhD thesis, Faculty of Physical Education , University of Baghdad , 1997, p. 67.

Qasim Hassan Al-Mandlawi and two others; **Tests, Measurement and Evaluation in Physical Education**, Higher Education Press, Mosul ,1989, p. 20.

Hikmat Al-Tai et al., Basketball for Physical Education Branches in Institutes of Central Teachers and Institutes of Number of Teachers**, TA, Directorate of Ministry of Education Press, 1991. P85 .**

RESEARCHED AREAS

- **Human** field: Emerging players of Shahrban Basketball Club (2023-2024) .

- **Time range:** from 15/1/2024 to 25/3/2024

- **Spatial field**: Basketball court in Shahrban Club/Vienna System Laboratory in the Faculty of Basic Education/Diyala University.

5. Research methodology and field procedures

The Approach of The Research :

The researcher used the descriptive approach in the style of correlational studies to suit the nature of the research procedures. "The descriptive approach is one of the methods of scientific methods that are concerned with collecting accurate scientific descriptions of the studied phenomena, describing the current situation and interpreting it while identifying common practices and identifying the opinions, beliefs and trends of individuals and groups , as well as studying the relationship between current and previous phenomena, especially those phenomena that came from previous events and affected or controlled the current events and their existing circumstances." (4)

- The research community and sample: The research community included the emerging players in the basketball , where the researcher identified the research sample of the emerging players of Shahrban Club, which numbered (38) players under the age of 15 years, where (30)players were randomly selected to represent the main experiment sample, while the players of the exploratory experiment numbered (8) players ." The sample, that part of the phenomenon society under study , is taken in a certain way so that it is a correct representation of society in order to identify the characteristics of this society. " (5)

- **Means of collecting data and information**: (scientific sources, basketball court, basketball (6) , poles (5) , whistle)

(4) Mohammed Jassim Al-Yasiri; Educational **Research**, Its Approaches **and** Designs, Dar Al-Diaa for Printing and Publishing, Najaf Al-Ashraf, Iraq , 2017 , p. 192.

(5) Mohammed Jassim Al-Yasiri; **Practical Designs in Educational Research**, Dar Al-Diaa for Printing **and** Publishing, Najaf Al-Ashraf, Iraq , 2018 , p. 132.

- **Identifying the tests used in the research** : By informing the researcher of most of the scientific sources and his experience in the field of measurement and testing, he identified the visual-motor synergy test through the use of the Vienna global test system. As for the peaceful correction test, the researcher identified one test. After that, these two tests, the visual-motor synergy test and the peaceful correction test, were presented to a group of (12) experts in the field of testing, measurement and basketball. After analyzing the results, the experts agreed on the two tests by (100%) .

- Optical-motor synergy test: After the researcher reviewed the literature and previous studies related to the title of the research , he identified the electronic system of tests (the Vienna test system) , and because these tests are global and characterized by accurate scientific foundations with great reliability among researchers and specialists , where many variables can be measured, including visual-motor synergy, to be applied to the exploratory and main research sample, and the system was reviewed in its parts , and also the specialized programmer was used to operate and manage it, the researcher was able to identify in detail and accurately the test system, how to conduct the test , and the extent of the device's ability to measure visual-motor synergy, through which the researcher can obtain data and interpret the results of the test and the raw grade.

- Interpretation of test results:

After completing the test, the researcher can obtain results and indicators for each player with a special card, and these indicators are :

- Correct answers: Represents the player's level in the visual-motor synergy test.

- Neglected answers: represent neglected, abandoned or omitted responses.

- Wrong answers: Represents the number of wrong responses.

- Total test time for each player : This represents the total time for the player's answers for each test paragraph.

These indicators include the raw scores and the percentage rank of each indicator. If the percentage rank is less than (40%) for the correct answers indicator, this means that the level of visual-motor synergy of the player is less than the acceptable level. If the percentage rank of the correct answers is between (41-50),

this means that the visual-motor synergy of **the player is average , the more it is, the level of visual–motor synergy of the player is good .**

– Peaceful Shooting Test: ([6])

Purpose of the test: Measuring peaceful correction.

Necessary tools: basketball court, basketball goal, whistle for the start signal.

Performance Description: The player stands on the arc of the no-go zone. The player starts at the start signal towards the basket and performs the peaceful shooting legally. Each player has (10) attempts, and Figure (1) shows this.

Scoring : - The player is awarded one point for each successful shooting.

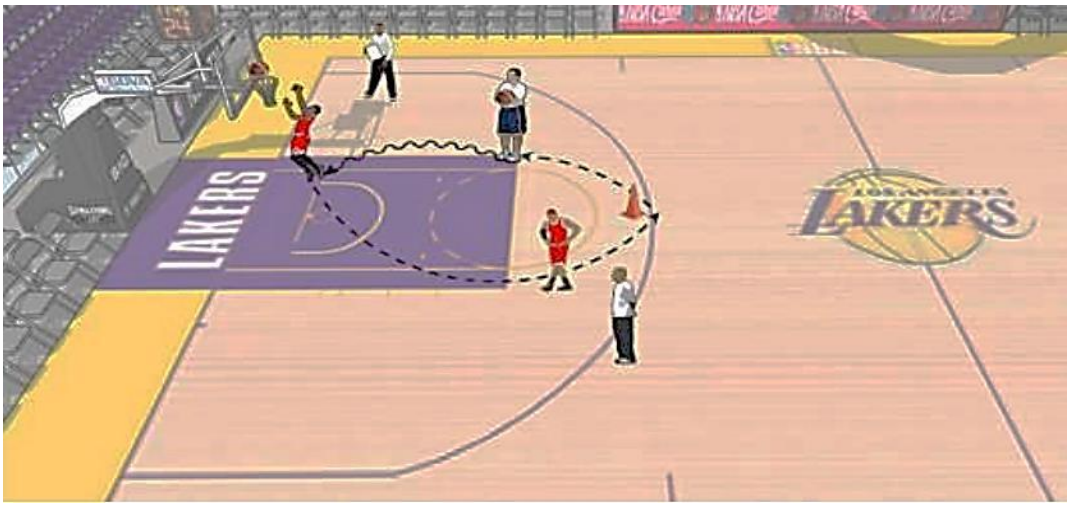

Figure (1).
Pacifist Shooting Test

- The exploratory experiment: The researcher conducted the exploratory experiment on (8) players representing the exploratory research sample, by applying the peaceful correction test at 4 pm on Wednesday, 24/1/2024. As for the Vienna system test, the researcher applied the test to the same sample on

(6) Yasar Sabah Jassim; **Basketball** Basics, 1st Edition, The Central Press – Diyala University, Diyala , Iraq, 2016, p. 113.

Thursday 25/1/2024 at 9 am , so the researcher found the suitability of the two tests for the research sample, as well as checking the tools used in the two tests .

- The scientific basis of the tests

Through the results of the exploratory experiment, the researcher worked to adopt the scientific foundations in the process of applying tests, despite the fact that they are standardized tests by determining the extent of the operation of these tests .

HONESTY

For the purpose of verifying the validity of the tests, the researcher resorted to presenting these tests to experts and specialists to ensure the validity of the content or content, as these experts and specialists agreed that these tests measure the quality that was developed to measure them .

Stability.

" The test is considered stable if it leads to the same results if it is repeated , especially if the conditions surrounding the test and the laboratory are the same in the two tests ." (7)

On this basis, the stability coefficient was found by testing and retesting on the exploratory sample on 28/1/2024, and the test was repeated after seven days, that is, on 4/2/2024, as the results of the law of association (Spearman) proved that the tests have a high degree of stability.

- Objectivity

The researcher used tests that are not influenced by the judges' judgment, so the tests used were characterized by objectivity." Objectivity means the independence of the results from the autonomy of the evaluator. Objectivity is affected by two factors , namely the laboratory's understanding of the objectives of the test and the instructions that clarify what is required from the test; and the method of evaluation, that is, the degree of the laboratory is not affected by who does the evaluation. If more than one arbitrator gives the score for the test itself, the results of the evaluation must be similar ."

(7) Saleh bin Hamad Al-Assaf; **Introduction to Research in Behavioral Sciences**, I, Sportsman, Al-Sakban Library, 2019 5, p. 186.

- The main experiment: The researcher conducted a kinetic synergy test on the main research sample of (32) players, at 9 am on Sunday, 11/2/2024, in the psychological laboratory of the Vienna system tests located in the Faculty of Basic Education/Diyala University. As for the skill test for the skill of peaceful correction, the researcher conducted the test on the same sample, on Monday, 12/2/2024, at 3 pm, and after completing the two tests on the research sample, the researcher collected and classified the data in order to analyze it statistically .

Statistical means

The researcher used the following statistical laws:

Arithmetic Mean

Standard Deviation

- Loom.

Pearson correlation coefficient

Modulus of torsion

View and discuss the results.

Table (1)

The statistical description of the variables of visual-motor synergy and peaceful correction

Sr	Variables	Arithmetic Mean	Standard Deviation	Mediator	Modulus of torsion	Coefficient of Variation
1	Development of motor visual communication	928	3,461	53	1,671	301
2	Peaceful Shooting	714	1,372	5	1,561	011

Through Table (1), which shows the statistical description of the research variables, and since the torsion coefficient ranges between (±1), this indicates that the sample was distributed naturally , as "the measurement has the ability to show the differences between groups

when the torsion extends from (-3) in the negative torsion to (+3) in the positive torsion." (8)

Table (2)

Shows the arithmetic circles, standard deviations and the simple correlation coefficient between visual-motor synergy and peaceful correction

Sr	Variables	Unit of measure	Correlation of visual-motor synergy and peaceful correction			Significance
			mean	Deviation:	Correlation coefficient	
1	Development of motor visual communication	Degree	928	3,461	926	Legal
2	Peaceful Shooting	Degree	714	1,372		

Table value (0,34) with a level of significance (0,05)

Table (2) shows the arithmetic mean of the visual-motor synergy test for the research sample at (928 , 54) and a standard deviation of (3,461) , as well as the arithmetic mean of the peaceful correction test at (714 , 5) and a standard deviation of (1,372). The value of the simple correlation coefficient was (0,926) , which is greater than the tabular value of (0,34) at a significance level of (0.05). This shows that there is a significant correlation between the two variables. The significance of the correlation between visual-motor synergy and peaceful correction of emerging players. The researcher attributes this to the fact that each player performs during the competition and according to the conditions of the game variables; with movements that need high visual-motor

(8) Omar Mohammed Sabri et al.; **Applied Statistics in Physical Education and Sports**, 2nd Edition, Alexandria, Egypt,2001, p. 172.

synergy, and at a high speed when the player moves to the basket , with the three steps that he performs when performing peaceful correction, which requires that there is harmony between the movement of the feet and looking towards the basket and measuring the distance between the three-steps and the opponent's basket to be suitable for performance and high flow . " Increasing visual-motor synergy increases the speed of the player's own movements because all the muscles involved in the performance become better compatible and thus reach a level of performance of skills perfectly "(9)

When the emerging player performs the skill of peaceful shooting perfectly , the fun viewing of the audience is achieved because the player performs sequential movements in quick, integrated and smooth steps to perform the skill . "The most important thing that distinguishes outstanding young people is that they have a great deal of compatibility between body parts, and they have the ability to link integrally to make rapid movement in order to achieve optimal performance of the skill . "(10)

Basketball, which is one of the team games that relies on scoring points as a method to determine the winning team in matches , is determined by the number of points scored by both teams. Therefore, visual-motor synergy is of great importance in performing the skills in this game that all players must possess. Therefore, all the basic principles and deliberate planning of the game become useless if it is not crowned with high visual and motor synergy accuracy that contributes to earning points and achieving results. Here, the researcher agrees with what Hassan Al-Sayed Mouawad stressed that "the result of the game

(9)Essam Mohamed Amin andMohamed Jaber Ahmed; **Sports Training Foundations- Concepts - Attitudes**, Alexandria , Maarif Establishment, 1979, p. 134.

(10) Mohammed Hassan Allawi and Nasr Al-Din Radwan; **Motor Performance Tests** , Cairo, Dar Al-Fikr Al-Arabi for Printing, 1988, p. 78.

depends on the success of the team in visual-motor synergy and that all the offensive skills performed with the cooperation of team members and the implementation of plans are nothing but preparation to achieve one goal, which is to implement the best and safest conditions in order to find an appropriate situation to end the attack process with high accuracy, compatibility and flow. "([11])

- Conclusions: Through the results of the research , the researcher found that there is a direct correlation between visual-motor synergy and peaceful correction in the research sample.

- Recommendations: Conducting studies to find the relationship for visual-motor synergy and other basketball skills.

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(11) Hassan Al-Sayed Mouawad; **Basketball for All**, Dar Al-Fikr Al-Arabi , Cairo ,1994,p. 14.

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