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Research Article

Synergy Sense – Kinetic (SMC) Using(VTSS.S) and Its Relationship to The accuracy of The Landslide and Straight Punching Performance in Volleyball

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Abstract: The research included the introduction and the importance of the research, as the researcher touched on the role of sensory-motor coordination (SMC) using (VTSS.S), an important role in mastering and developing basic skills in many sports and sports events, including volleyball, which is one of these important processes that work On the success of the application of various skills, it also helps to develop quick solutions for individual and group skills. The skill of crushing beating is one of the skills that require compatibility between hands, eyes and feet. The importance of the research came through emphasizing the role of sensory-motor compatibility exercises (SMC) for the purpose of teaching and developing them in a good and correct manner using the Vienna System (VTSS.S) with the aim of developing the accuracy of performing some diagonal and straight smash hits. The aim of the research is to identify the relationship between sensory-motor compatibility (SMC) and concentration of attention and the accuracy of the high crushing method (diagonal and rectilinear), and the research community consisted of students of the fourth stage in the College of Physical Education - University of Baghdad, whose number is (229) students. The researcher conducted a lottery process to select (40) students randomly. The high smash hit test, the sensory-motor compatibility test (SMC) and the numbered circuit test were conducted in the indoor hall of the volleyball court at the College of Physical Education, and the researcher reached several results, including:

The researcher reached recommendations, including emphasizing the use of synergy-sense-kinesthetic exercises (SMC), in terms of the Vienna system, because it helps in developing the compatibility of the eye, hand and leg to develop the sense-kinesthetic synergy (SMC) for students of the Faculty of Physical Education. The researcher recommended several recommendations to emphasize the use of Sense-Motor Synergy (SMC) exercises, in terms of the Vienna System, because it helps in developing the compatibility of the eye, hand and leg to develop Sense-kinesthetic synergy (SMC) for students of the Faculty of Physical Education.

Keywords: Sense-kinesthetic compatibility (SMC) - Vienna system (VTSS.S**).**

1. Introduction

Volleyball is one of the games that occupied a wide space for its fans and followers, like the rest of the other organized games , because of its fast rhythms, follow-up and continuous exchanges between offensive and defensive skills, because of the nature of this, which is characterized by the accuracy and speed of technical performance .

All the voluntary actions that the individual performs are the result of the work of one muscle or a group, and sometimes the matter requires the participation of several muscle groups, and this depends on the type of work and the amount of force to be used. Work on the performance of movements requires a degree of mismatch between the nervous system and muscular and highlight the importance of muscular and nervous compatibility in volleyball can be observed synergistic sense - kinetic (SMC) by observing the player's ability and focus and the organization of motor actions.

Sense-dynamic compatibility and plays an important role in the mastery of basic skills and develop them in a lot of games and sports events including volleyball game, and these capabilities is one of these important processes that work on the success of the application of different skills and helps to develop quick solutions for individual and collective skills , It also helps in the performance of skills elaborately, Fmharh are overwhelming beating of skills that require compatibility between the hands, eyes and legs .

The importance of research in the basic skills in volleyball her important role in this game, and its performance requires precision during the game, so it has to be hard work for the purpose of education and develop well and using the correct exercises synergistic sense - kinetic (SMC) using the Vienna system(VTSS.S) With the aim of developing the accuracy of performing some diagonal and straight smash hits.

1-2 research problem:

The goal of the volleyball game is to score the specific points to win the game and the game by dropping the ball into the opposing team's court by using the accuracy of performing the basic skills starting from serving, crushing and blocking, which require a process of mastery and proficiency during the implementation of its performance.

The concentration of attention is one of the mental processes that results in a good reaction. The performance of various skills requires concentration of attention. Serving requires focusing on the place of the weak player in the opposing team or the place where there is a defensive gap, as is the case with the crushing beating and the blocking wall, as the process of learning this requires Skills The ability to focus attention.

Through the researcher's follow-up to the educational units of volleyball in the College of Physical Education - Baghdad, he noticed a problem that learners suffer from, which is the lack of neuromuscular coordination and focus of attention during the process of learning basic skills, and this is reflected in their inability to have solutions to achieve the main and important goal in the process Teach them the art of these skills so that they can develop the accuracy of performing that skill.

1-3 Research Objectives:

The research aims to Miley

1- Recognize the relationship between sensory-kinesthetic synergy SMC The focus of attention and the accuracy of the high smash hit method (diagonal and straight) among the students of the fourth stage.

1-4 Research Hypotheses:

1- There is a significant relationship between sensory-motor synergy .SMC) and the accuracy of the high crushing multiplication method (diagonal and straight) among the students of the fourth stage.

1- The human field: fourth-year students - College of Physical Education - Al-Jadriya.

2- Time range: from 5/12/2020 to 30/3/2021.

3- Spatial domain: the indoor halls of the volleyball court in the College of Physical Education - Al-Jadriya.

2- Theoretical and similar studies

2.1 Theoretical studies:

2-1-1 synergy (sensory-kinesthetic)SMC) :

It is the ability of the nervous system to give more than one command at the same time or with a very small time difference.Singer It is the individual's ability to control the work of the various parts of the body that are involved in the performance of a specific motor duty and linking these parts to a single smooth movement with an effective effort to accomplish that motor duty, and that all the voluntary actions performed by the individual are the result of the work of one muscle or a group and sometimes It requires the participation of several muscle groups , and this depends on the type of work and the amount of force to be used. The work in performing movements requires a degree of coordination between the nervous and muscular systems, and it is divided into general and specific coordination.. Compatibility is one of the elements of physical fitness and one of its many components that, once acquired by the athlete, will determine for him sufficient experience, which is the sum of the various models and components of physical fitness. Larson defines it (Larson):

(It is the individual's ability to integrate movements of different types into one frame.

Means synergy - kinetic ability of the individual to move the two groups Editing two or more different in two different directions at one time "or it is “the individual’s ability to control the muscles of his body, collectively or individually, according to the requirements of the activity.

And kinetic compatibility of two types , namely.

1- General compatibility:-

It is the ability of the learner or player to respond to various motor skills regardless of the characteristics of the game and is considered as a necessity for practicing the activity and represents the first basis for the development of special coordination.

2- Special Compatibility:-

It is the ability of the learner or player to respond to the characteristics of the motor skills of the exercised activity, which reflects the player's ability to perform effectively during training and competitions.

The methods or motor compatibility development methods are;

1- Normal start from different positions as the performance of the training.

2- Performing skills on the reverse side.

3- Restricting the speed and rhythm of motor performance and determining the distance of performing the skill.

4- Increasing the level of resistance in the performance of the movement stages.

5- Performance in abnormal conditions.

1-1-3 The skill of hitting high smash in volleyball:

(It is one of the skills of hitting the crushing ball in volleyball, which is hitting the ball with one hand and directing it to the opposing team’s court in a legal manner. And it is a skill that requires a combination of timing, balance, muscle strength, and speed of movement.

Crushing is one of the most important and most powerful methods of attack that the team uses during play, and in terms of effectiveness, it is considered the first in the order of skills by their impact and compared to the rest of the skills in the course of the match. the other.

The (high smash hit is the most frequent type on the field compared to other types , and the process of hitting the ball through the upper surface so that the hand covers the ball to make it in a rotational movement and returns the entire arm during hitting and the angle between the forearm and upper arm is right to give the greatest force to hit.

3- Research methodology and field procedures:

3-1 Research Methodology:-

The approach chosen by the researcher must be appropriate to resolve the problem and approach is a technique that is followed by the researcher to determine the steps to his research from which to solve the problem and by using the researcher descriptive style survey to find relationships between and more variables , which gives the interpretation of the relationship analysis of a logical digital phenomenon.

2-3 Research Sample:-

The researcher identified the research community, who are students of the fourth stage in the College of Physical Education - University of Baghdad - Al-Jadriya, whose number is (229) male and female students, due to the availability of the requirements required to conduct the research, and after excluding the students who failed, postponed, injured and males, whose number is (37) male and female. With that, the remaining number became (197) students, after which the researcher divided them randomly according to the arrangement of odd and even numbers into two parts. The homogeneity of the sample in the variables (height, weight, and age) and the equivalence of the research group in the skill tests (diagonal and straight smashing) , the attention-focus network test , and the sensorimotor synergy test) SMC), and these variables were treated statistically by using the coefficient of variation law of homogeneity and the test)t-test) for parity and as shown in Tables (1 and 2) respectively.

Table (1) shows homogeneity in the variables (height, weight and age)

coefficient of variation%	standard deviation	Arithmetic mean	Variables
1.83	3.15	172.31	**length/cm**
3.79	2.82	74.36	**Weight/kg**
4.09	0.87	21.23	**age/year**

Table (1) shows the homogeneity of the research sample variables (height, weight and age) because the values of the coefficient of variation came less than (30%).

Table (2) shows the equivalence of the two research groups in the variables under investigation

Indication type	Values(t) calculated	experimental group		control group		the group Variables
		+p	s	+p	s	
insignificant	0.50	1.45	8.12	1.67	7.89	Sensory-kinesthetic synergy test SMC
insignificant	0.78	1.63	14.02	1.98	13.56	Qatari crushing
insignificant	1.36	2.17	11.93	2.09	12.87	Straight Accelerator

Values(t) Tabularity = (2.02) at the level of significance (0.05) and the degree of freedom (38).

Table (2) shows that the type of significance for all variables was not significant because the values of (t) calculated for all variables were smaller than their tabular value of (2.02) at the significance level (0.05) and the degree of freedom (38).

3-3 Means, tools and devices used:-

The research tools are what help the researcher in collecting his data and solving his problem in order to achieve the objectives of the research, whatever the tools are from data, samples and devices. so the researchers used a set of the following means, tools and devices: -

- Arab and foreign sources.
- resolution.
- Note.
- Tests and measurement.
- vienna system device vtss.s) for psychological examination, measurement and diagnosis, (Austrian origin)
- Height and weight measuring device.
- computer dell.
- Video camera type Sony.
- Legal volleyball court.
- Legal volleyballs type micassa)) number(10) .
- type whistles (fox) number(1)
- Adhesive tape with a width of (15) cm, number (2).

3-4 The pilot experiment:

The exploratory experiment is considered a "practical training for the researcher to identify the negatives and positives that he encounters during the test in order to avoid them." , before the experiment , the researcher by providing the tools necessary for testing were selected 14 students from the research community and outside of the original sample was applied tests placed on 6/12 /2021 On the volleyball court at the College of Physical Education - Al-Jadiriya, and the high smash test, in both the diagonal and the straight, and giving each ' Student (10) attempts for each region (15) attempts, and the numbered circles test was also conducted in the same mentioned stadium . A sensory-motor synergy test was carried out .SMC)

3-5 The main experiment :

The tests were applied to the research sample, and the high smash hit test and the sensory-motor synergy test were conducted .SMC The numbered circuits were tested in the indoor hall of the volleyball court at the College of Physical Education - Jadiriyah, on (10/12/2021 until 3/01/2021), and the steps for implementing the tests were followed in the following order:

3-5-1 Test numbered circuits-

- The purpose of the test: - To measure the compatibility between the eyes and the legs.
- Tools: - A stopwatch, draw 8 circles on the ground, each with a diameter of (60) centimeters, and they are drawn randomly, not sequentially, as shown in figure (1).
- Performance Specifications: - The laboratory stands inside circle No. (1) and when the start signal is heard, the laboratory jumps with both feet to circle No. (2), then to Circle No. (3) and the fourth....etc. Even the No. (8), and the test maximum speed.
- Recording method: It records the time it takes for the laboratory to travel through the eight circuits.

Figure (1) Test numbered circuits

3-5 field research procedures:

3-5-1 Description of the tests:

First, a reaction test (sensory-motor synergy) and includes the following:

The first stage: the stage of examination, measurement and diagnosis according to the Vienna systemvts)) was carried out as follows :

1. The data for each player was entered in terms of: name, gender, age (day, month, year), educational attainment, club name, date.

The second stage: (the actual measurement stage): It included the following:

2. Psychometric measures of reactions according to the Vienna system (Vts .s) for examination, measurement and diagnosis, and was carried out as follows:

1. Before you start conducting tests for the research sample, the researcher with the assistant team, explain and apply how to perform test synergistic sensory motor responses of your actions according to the Vienna system (Vts .s) concerned with examination, measurement and diagnosis

2. The researcher with the assistant work team carried out the measurements and examinations of the research sample according to (vtss.s) concerned with examination and measurement.

1. Test formats:

the test(MLS):

The test MLS It is a sophisticated and very accurate test based on the research of the scientist Fleischmann Fleischmann Analytics associated with micro-movement factors. It is in this range that the dynamic and static movements (movement and rest) of the fingers, hand and arm are measured.

test score MLS The following six fine kinetic factors::

- aiming (moving towards a specific target)
- hand trembling
- Precision of arm and hand movement
- Hand skill and finger precision
- Arm and hand movement speed

- The speed of movement of the wrist and fingers

areas of use: Psychology Riadia neuropsychology, clinical psychology and health also, your staff Psychology. As shown in Figure (2).

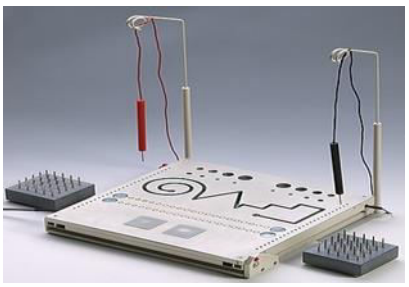


Figure (2) shows a test MLS Synergy sensory motor

2. Test duration:

The time required for the test is approx.30Accurate including instructions and exercise phase.

3-4-3 Test the level of performance of the skill of crushing beating in the diagonal direction:

Equipment: a legal volleyball court, the court is planned as shown in Figure (2), a volleyball (5), a foam mat (2).

performance method:

The coach prepares the ball for the player standing in the position of 4, and the player must perform the skill of crushing in the diagonal direction towards the goal (the rug) and for each player (30) attempts, (15) attempts on each goal.

Register:

Correct smash hit on target (4) points.

The correct smash hit in which the ball falls into the designated area (3) points.

The correct smash in which the ball falls into area (a) or (b) (2) a point.

The correct smash in which the ball falls into area (c) (1) point.

Notes:

The player is given a 30-second rest period after every five attempts.

The easy ball (lob) is not counted.

The coach tries, as much as possible, to fix the height and arc of the ball from the net.

The same test can be done from the center (2).

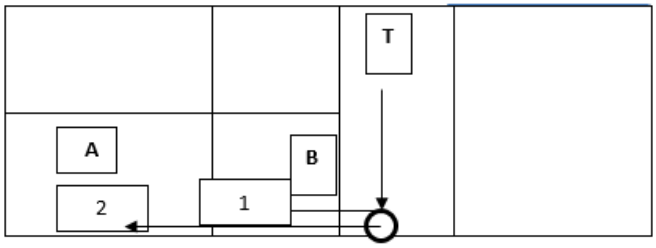


Figure (3)A drawing of the volleyball court in the Qatari avalanche test

3-4-4 Test the level of performance of the skill of crushing hitting in the straight direction :

Tools: a legal volleyball court , the court is planned as shown in Figure (3), a volleyball (5), a foam mat (2).

Method of performance: The coach prepares the ball for the player standing in the position of 4, and the player must perform the skill of crushing in the straight direction towards the goal (the rug) and for each player (30) attempts, (15) attempts on each goal.

Register:

Correct smash hit on target (4) points.

The correct smash hit in which the ball falls into the designated area (3) points.

The correct smash in which the ball falls into area (a) or (b) (2) a point.

The correct smash in which the ball falls into area (c) (1) point.

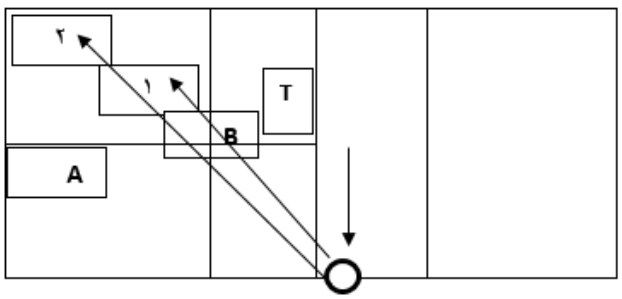
Notes:

- gives the player a rest period of 30 that after all five attempts.

The easy ball (lob) is not counted.

The coach tries, as much as possible, to fix the height and arc of the ball from the net.

The same test can be done from the center (2).



Fgure (4).A diagram of the volleyball court in the straight smash test

3-6 Statistical means:

A set of necessary statistical methods were used that helped in processing the results of the research, testing its hypotheses, achieving its goals and reaching an accurate treatment, using the statistical program. (SPSS).

4- Presentation, analysis and discussion of the results

4.1 presentation and analysis and discussion of the results of synergistic sense - kinetic (SMC) :

The results showed that the arithmetic mean of the compatibility tests for the research sample was (5.80) and standard deviation (0.33) in relation to which is receiving the balls. As for the test of the circles, it was the arithmetic mean (4.90), standard deviation (0.50), numbered circles (4.70) and standard deviation (0.80). As shown in Table (4)

Table (3) shows the mean and standard deviation of the neuromuscular alignment

	Test Synergies sense kinetic (SMC)	**the exams**
p	**S**	
0.78	24.10	numbered circuit test

∟ Below the significance level (0.05) and the degree of freedom (5).

4-2 Presentation and analysis of the results of the accuracy test for the skill of high smash hit:

The results of the accuracy test for the skill of the diagonal high smash hit showed that the arithmetic mean of the research sample was (34) and the standard deviation was (3.24), while the arithmetic mean of the same club for the straight high smash was (30.75) and a standard deviation (0.96). As shown in Table (5).

Table (4) shows the arithmetic mean and standard deviation of the accuracy test for the skill of high smash hit

numbered circles Compatibility between eyes and legs		**synergy (sensory-kinesthetic(SMC (**		**the test**
p	**S**	**P**	**s**	
0.96	**30.75**	**1.24**	**34**	Accuracy of the skill of the diagonal crushing strike
0.78	24.10	3.47	31.88	Accuracy of straight smash hit skill

5 Presentation and analysis of the results of the correlation between sensory-kinesthetic synergy)SMC) And the accuracy of the skill of hitting the crushing high:

For the purpose of knowing the degree of the relationship between sensory-kinesthetic synergy SMC) And the accuracy of the skill of high crushing hitting with the quality (diagonal and straight). The researchers used

the rank correlation coefficient (Spearman) in addition to the test (T) To find the moral significance, the researchers adopted a degree of freedom (5) under the significance level (0.05), and table (5) shows that.

Table (5) shows the value of the correlation coefficient between sensory-kinesthetic synergy) SMC) and the accuracy of the skill of hitting crushing high

Values T Calculated for the significance of the correlation		**The value of the correlation coefficient (Serman(**		**Estimates statistic For compatibility and accuracy**	**NS**
		High smash hit skill			
		Rectum	**Qatari**		
3.45	15.12	0.82	0.99	Test numbered circles	.1

Below the significance level (0.05) and the degree of freedom (5).

4.6 Presentation and discussion of the results of synergistic sense - kinetic (SMC) and its relationship to the accuracy of the high crushing hitting skill:

For the purpose of arriving at the degree of the relationship between sensory-kinesthetic synergy (SMC And the accuracy of the smash hit is high , the researcher used the multiple correlation, which examines the relationship between several variables at the same time, and to test at the same time to test the significance of the correlation, the researcher used F For the significance of the correlation and Table (6) shows that.

Table (6) Shows the correlation between sensory-kinesthetic synergy SMC) and precision numbered circuits

Values F Calculated for the significance of the correlation		**The value of the multiple correlation coefficient**		**the exams**
		High Crush Accuracy Skill Results		
Rectum	**Qatari**	**Rectum**	**Qatari**	
7.68	**7.85**	**0.97**	**0.96**	**numbered circles**
7.68	**7.98**	**0.94**	**0.95**	**synergy (sensory-kinesthetic(SMC)**
7.68	**0.05**	**0.93**	**0.90**	**high smash hit**

Below the significance level (0.05) and the degree of freedom (5).

The results showed that there is a significant correlation between the numbered circles and the sensorimotor synergy (SMC) And the accuracy of the skill of high smash hit with its two types (diagonal and straight), which respectively amounted to (0.96) for the numbered circles , and (0.95) in concentration of attention and (0.90), while the value of (F) calculated, respectively (7.85), (7.98) and (9.50) under the level of significance (0.05) and the degree of freedom (5), the tabular amount reached (2.57) and thus the calculated is higher than the tabular one. As for the results of the value of the correlation coefficient for the numbered circles and the straight high multiplication , while the value of (FC calculated (7.68) in a row, and they are higher than the tabular value.F) of (2.57) is below the significance level (0.05) and the degree of freedom (5), which indicates a significant correlation

Which indicates that the researcher test the numbered circuits and synergy (sensory-kinesthetic) SMC And the accuracy test for the skill of high smash hit with its two types (diagonal and straight) had a significant impact on the improvement of the performance of the sample members because they had experience and physical ability and skill in performing physical, skill and mental duties well, because most of the sample members were players in the college volleyball team and some Iraqi clubs for the same game, all that enabled them to apply the skills and psychological tests and conformance tests well and smoothly and agree high . this was confirmed by (buxom Abdul, 2008) that " the success of any team and access to the upper levels but depends on how well the players of

those skills accurately and master , making it easier for them Carrying out their defensive and offensive duties as well as the physical, psychological, tactical and educational aspects .

The researcher also attributes the reason for the existence of the correlation relationship as well to the fact that the skill (crushing beating), which is one of the basic and important skills in the game of volleyball, and it needs synergistic sensory-motor.SMC(Between the eye, the ball, and the striking arm, and also needs good accuracy and attention to the movement of the arm and its compatibility with the eyes, so the practice and application of the learners' motor coordination exercises has had a positive impact on finding sensory-kinesthetic synergy)SMC) by focusing attention, and this is indicated by (Allawi, 1987) that "the sense of skill, both mentally and physically, contributes to its development, especially if it is within a program based on scientific standards to which the educational process is subject.

5- Conclusions and recommendations

5-1 Conclusions:

The researcher reached the following conclusions:

1- (sensory-kinesthetic synergy)SMC) is significantly correlated with the compatibility between the eyes and the legs .

2- (sensory-kinesthetic synergy)SMC) is significantly related to the accuracy of the high smash hit in volleyball.

5.2 Recommendations:

The researcher reached the following recommendations:

1- Emphasize the use of synergy-kinesthetic exercises (SMC) ,In terms of the Vienna system, because it helps to develop coordination of the eye, hand and leg, to develop sensory-motor synergy (SMC) for students of the Faculty of Physical Education.

2- Emphasis on the use of motor precision exercises with training methods commensurate with the possibility of the physical and skill sample to develop motor and mental skills.

3- Emphasis on the psychological and skill aspects of volleyball to advance the psychological and physical level.

4- Conducting research and studies similar to the rest of the other skills of volleyball and other sports.

5- Organizing periodic seminars and lectures by specialists and experts regarding the subject of sensory-kinesthetic synergy (SMC) Using the Vienna system for measurement, examination, diagnosis and other skills to advance the reality of volleyball and other sports.

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