


دراسة مقارنة للتوافق العصبي العضلي بين دقة المهارة الكتابية للغة الانكليزية ودقة التصويب باليد لبعض طلاب المرحلة الرابعة

وسن فاضل هادي
تربية الرصافة الاولى
Wason.fadel@uomustansiriyah.edu.iq

الملخص

هدف البحث هو التعرف على علاقة التوافق العصبي العضلي مع مهارة الكتابة باللغة الانكليزية ودقة التصويب بكرة البد لدى بعض طلاب المرحلة الرابعة وافترضت الباحثتان بانه توجد علاقة ذات دلالة إحصائية بين التوافق العصبي العضلي مع مهارة الكتابة باللغة الانكليزية ودقة التصويب باكرة اليد و استخدمت الباحثتان المنهج الوصفي واشتملت عينة البحث على (18) طالبا من كلية التربية البدنية وعلوم الرياضة وتم اجراء الاختبارات هي :اختبار التصويب من الوثب عاليا واختبار الدوائر المرقمة (للتوافق العصبي عضلي) واختبار مهارة الكتابة باللغة الانكليزية واستنتجت الباحثتان: يرتبط التوافق العصبي العضلي العين والذراع مع مهارة الكتابة باللغة الانكليزية وكذلك يرتبط التوافق العصبي العضلي بمهارة التصويب باليد بكرة اليد ,ومن اهم ،التوصيات جعل صفة التوافق العصبي العضلي صفة من الصفات الاساسية التي يكون خلالها تعليم الطلاب كيفية دقة الكتابة باللغة الانكليزية و التركيز على تدريب مهارة التصويب بكافة انواعه لكي يستطيع الطلاب الاستمرار بتنفيذ الواجبات الحركية لاطول فترة زمنية ممكنة لتطوير صفة التوافق العصبي العضل.

الكلمات المفتاحية : توافق العصبي العضلي ، دقة المهارة ، الإنكليزية ، التصويب

A comparative study of Neural –Muscular agreement with the accuracy of English hand writing and accuracy of shooting in hand ball to the 4th grade students.

Wasan Fadhil hadi
Rusafa first education

Abstract

The aims of the study is to identify the concurrence between Neural-Muscular and its relation to the accuracy of English hand -writing skill and the Neural-Muscular and its relation to the shooting accuracy in handball to the 4th grade students .The researchers assumed that there is a relation with a symbolic indication between the Neural –Muscular agreement and the accuracy in English hand -writing skills besides the accuracy of scoring in hand ball .The researchers used to descriptive method with the sample of the research that includes (18) students from the college of physical Education and sport sciences. The main experiment was of three tests. The scoring from the high jump, throwing and receiving the balls ,as well as the accuracy of English hand –writing skill .The results : there is neural-muscular concurrence connected the eye –arm with the English hand writing skills . There is neural-muscular concurrence connected with the hand scoring in hand ball. Recommendations: Making a Neural –Muscular concurrence one of the main features by which the students learn how to be accurate in English hand –writing skill. Focusing on training of scoring skill in all its types so all students can achieve all the motor activities as long time as possible to develop the Nerve – Muscular concurrence.

Keywords: Neural –Muscular agreement , the accuracy , English , shooting

The Definition of the Research

Introduction and the Importance of the Research

All the voluntary activities that the human can achieve are the results of the action of one or group of muscles .Sometimes this requires a combination of different groups of muscles as it goes together with the kind of the action and the amount of both ; the power and the speed required for that action to work with (6: 1999:60).The combination (participating) requires more than one muscle to do certain action at the same time it doesn't mean that all the muscles work in one direction with the same amount or mass but their work differs in terms of the importance of relativity that muscles can do in this action. In the term of learning and improving skills , a skilled performance is a sequence of movements that happened in a fluent and a controlled way .In any action the right options must be chosen , besides skills, techniques all are used fully to show the performer's ability and experience ,Brian .G.(13: 2022:2).Human usually perceive the world using multi-modal sensory inputs such as vision ,audition and touch .Vision and touch are of highly entwined , we can close our eyes and use our fingers to guess the objects :the feeling of touch is like seeing objects . We can imagine the hardness of the objects from merely our vision .They share physical properties that influence both modalities .It would be possible to build representations from one modality and transfer them to another ,Yunz huli , Jun-Yan Zhu ,Russ Tedriake ,Antonio Torrelba (21:2020:1).Iman M.M. Muwafaq Al-Ghabra (14: 2015:168) says that when we talk about movements no one can assume that there is no relation between hand writing and the brain ,Lundberg (2003)states that "hand shape the mind in functional terms ".So the brain is the extension of the hand ;any movement in our hands has its representation in our minds because of the agreement between the muscles and the brain. Hand ball is one of the games

that rely almost on the range of mastering the basic , complex motor –skills .It is also has a special mode since it plays in hands as quickly especially in passing on , scoring and receiving ball beside other activities .For that pointing or directing the ball must be accurate and fast at the same time , in this respect , the need for accuracy besides focusing is essential. This is only possible to achieve with number of different muscles engages in this activity as well as the possibility of controlling these groups of muscles that can be found in all of the body of the player. (6:60: 1999) This research requires a know agreement (concurrence) between the Neural system with the muscular system and how this concurrence affects the physical efforts that is given in the match or during the writing skill. This Neural Muscular agreement has an essential role in achieving victory in the game or acquiring a good hand –writing skill in English language .

The Problem of the Research

The real importance of the neural –muscular concurrence aims in its being essentially depends on consecutive muscular –contractions that flow smoothly and relatively fast .Most of the fundamental skills in playing sport especially hand ball skills as well as the English hand writing skills which both are hand base skills .It was assumed(spouse) that is there a concurrence (corresponding) between the neural –muscular systems and the accuracy in English hand writing skills and shooting skills in hand ball sport ?

It has been also noted that the students' hand writing skills in English are not accurate and this reveals lacking of accuracy in English hand writing skill and this requires a measurement and a relation so that it is important to know to what extent does the neural –muscular concurrence have a role to both some motor

behavior skills such as English hand writing and the shooting skills in playing hand ball to some the 4th grade students in physical education and sports science.

Aims of the Research

1.knowing about neural –muscular concurrence to the sample of the research .

2.knowing about the accuracy of English hand writing skills and shooting skill in hand ball sport.

3.knowing about the relation of the neural –muscular concurrence and its role in hand writing skills in English and shooting skill in hand ball sport to the students of the 4th grade .

Hypotheses of the Research

1.There is a relation with a statistical indications between the neural –muscular concurrence and the accuracy of the English hand writing skills to some of the students of the 4th grade .

2.There is a relation with a statistical indications between the neural –muscular concurrence and the accuracy of shooting skills in hand ball to some of the students of the 4th grade .

Fields of the Study

1.The human field : students of the 4th grade , the College of Physical Education and Sport Sciences at Al-Mustansiriyah University.

2.Time field 12- 20 /1/ 2023

3.Space field :The class in the College of the Physical Education and Sport Sciences ,and the opened court of College of physical Education and sport science .

Limited items

1- Agreement definitions and Concepts

the concurrence as the athletic ability to perform any motor action with accuracy to achieve the desired goals with less efforts" (1:1997:205)

It is also defines as the ability of the neural system to give more than one order at the same time with a slight different of time .As singer mentioned that the concurrence could be defined as the ability to control the work of different parts of the body that combine in performing any certain motor activity and connecting these parts with a single streaming movement with an effort to achieve that motor duty .This concurrence can be subdivided into full agreement or partial agreement .(5:2001:52). The neural –muscular concurrence as the functional perfection of the whole body parts in duty to achieve motor duties with an accurate , speed , elegant with a high streaming flow along time duty .The eye –hand agreement is the most important features to the athletic performance during which the nerve signals transmitted between the nerve and the muscular systems , so all the movements that the one could achieves whether daily they are daily normal ones or that ones that connected to the athletic performance require this concurrence between the neural and the muscular systems. This concurrence required balanced features , elegance ,flexibility ,motor senses ,accuracy of performing a movement .It is important for the athletic to have such concurrence of the whole body moreover the eye –hand agreement this concurrence considers one of the most important mechanisms that contributes in the success of athletic to perform the duty required (9:1999:157). J.W. Morley (1998:131) admitted that

the neural –muscular concurrence or agreement plays a dynamic role in the action of the skeletal muscles .It means that it manages the transmitting the excitatory electrical impulse from the nerve system towards the muscles fiber causing a muscle. He added that touch and vision are strictly related to each other .Although the mechanism of the sensory organisms are different in two systems :It is more likely that the nerve system develops normal neural mechanism for doing and storing information which are similar in the two systems.

As Roud J. Awhusman (2015:3) believed that the main task of the Nero-motor system is to control the tension and the length of the muscles to generate the required movements of the skeleton.

The Systematic and Field procedures of the Research

The Systematic of the Research

The researchers use the descriptive method to suits the nature and the problem of the research .

Samples

The sample of the research : It was chosen with the intentional method which is section (A)for morning studies College of Physical Education and Sport Sciences in Al- Mustansiriyah University ,fourth class of the year (2022-2023) , and there were 18 students with a rate of (%46).

The tools and the equipment used :

The tools

The researchers uses the following research methods :

-Arabic and English references

-A special form for the hand writing accuracy

The equipment

-Hand ball field

-Hand ball balls number (6) balls

-Tennis balls number (5)balls

-A stop watch

-A square iron located at the angel of the goal with 40×40 cm. number (4)

-A tape with (10m.) long .

- A lecture class .

The Tests used in the Research

Through testing numbers of scientific reference and using the neural muscular concurrence the tests are restricted which are :

1-The test of throwing and receiving the ball
(3:2004:151).

-The aim of the test :eyes –arms concurrence .

-tools used (3)tennis balls , a wall with a return line drawn at (5)m. form the wall

-performance :the player stands in front of the wall behind the drawn wall , on the ground as follows :

1-Throwing the ball (5)times with the right hand and receiving them after touching the wall with the same hand .

2-throwing the ball (5) times with the right hand and receiving them after touching the wall with the same hand .

3- throwing the ball (5) times with the right hand and receiving them after touching the wall with the left hand .

4. throwing the ball (5) times with the left hand and receiving them after touching the wall with the right hand .

-Scoring :each correct attempt scores a point to the tester with a final degree of (20) point .

2-Test of hand writing skill in English

A special form for the English hand writing skills was filled with number of sentences and given to the students to re write the sentences with hand writing and this form has a key (1-15)degrees/ marks ,The test of the theoretical test to the linguistic subject , the hand writing in English skill and depending on the form that is made and given to the students with a (15-20) minute to do the answers and write their marks. (14:2015:5:)

3 -The test of the accuracy from shooting high jumping in hand ball (1:)

The purpose of the test :accuracy shoot from the high jumping .

Tools (6) balls high jump device of 150 height and the space between the right angel (2m.), four squares with (40m.×40m.) the space between the four angels of the goal.

The way of performing : the player stands behind the beginning line according to the pointing arm in front of the high jump device directly catching the ball .

-The player takes 2-3 steps and doing the shooting from the high jump to the square number (1)then to (2), (3),(4).

-Repeating the performance three times which means (12) ball , three times for each square .

Rules :no more than three steps .

Scoring :a point when the ball enter the goal of the scoring square and zero for scoring out of the goal .No scoring when the player takes more than three steps.

2-5 The Reconnaissance Experiment

The Reconnaissance Experiment was held in on Sunday 8/1/2023 at 9:00 o'clock at the open fields of the college (4) students who are not the real samples of the experiment .The aim of this experiment is to know the obstacles and the negatives that faced the researcher during his job. Through this experiment the researchers will know the time allotted for the test and the ability of the devices used , the tools more over that to be sure of the proficiency of the helping staff , training them to do the main experiment also to be sure of the sequence of the tests .

Scientific bases of the tests :-

2-6-1The resistance of the test

The resistance of the test means that "the test that gives a close results or exact ones if it adopted with the same circumstances (12:2005:145) .

The test is re used to find the stability coefficient , (1999) emphasizes that the test could be repeated at the same sample twice or more than that under similar circumstances to find out the stability , so the test was repeated on the sample after a week later ,the simple correlation coefficient (Person) was used to find out the stability coefficient .

2-6-2 Subjectivity of the test

The most important factors that should be provided in the test is the subjectivity which is to be free from stability , no personal interfering (11:1999:70)

"when the test is held the researcher should be away from bias for his decisions but to rely on the evidence and proofs in assessing method " . (8:2004:28)

2-7 The main experiment

The researchers make the main experiment which includes the special experiments , the accuracy of shooting from the high jump as well as the neuro-muscular tests of eye –arm concurrence

On Sunday 18/1/2023 the tests are held . The sample of the test was told to come to the college field at the College of Physical Education and Sport Sciences at 9 o'clock in the morning to do the tests .After coming they were told about the

importance and the content of the tests to know the level of the sample. the student will do the shooting skill from the high jump in hand ball , then doing the neural muscular test of eye –arm concurrence (throwing and receiving the ball), then they done the test of English hand writing skill in the class .The data then separated in a special form data made for that purpose to deal with the data and come out with results .

2-8 The Statistical

The researchers used the statistical (spss) to get the results.

-Arithmetic means .

-Standard Deviation .

-person

-Percentage

-mean

3-Discussing the results

3 -1 Present and Analyzing and discussing the Results

1 - Presenting and analyzing the results under study of the Arithmetic mean and the standard deviation to the sample of the research

Table (1)Explains the Arithmetic mean and the standard deviation to the sample of the research under study .

Variables	Mean	standard deviation
Concurrence	18,5	0,89
English skill	8,52	1,12
Shooting skill	6,20	1,02

Table (1) Explains the Arithmetic mean and the standard deviation to the sample of the research under study .It shows the eye –arm concurrence at which the Arithmetic mean was (18,5 - 8,52 – 6,20) consequentially with a standard deviation of (0,89 - 1,12 - 1,02) consequentially .

3-2 Present and relation eye –arm concurrence with English concurrence skill

Present and analyze the results of the Arithmetic mean and the standard deviation with the value of correlation coefficient (R) between Eye –arm concurrence and English hand writing skills.

Table (2) Explains the Arithmetic mean and the standard deviation and the relation between the sample of the research under study

Variable	Measuring units	Arithmetic means	Standard deviation	Correlation coefficient	Error level	Indications
Eye –arm concurrence	Minute	18.5	0,89	0,66	0,004	Symbolic
English concurrence skill	Degree	8,52	1,12	0,66	0,004	Symbolic

Under the symbolic level (0,05)

Table (2) shows that the Arithmetic means for the eye- arm concurrence test shows (18,5) with the standard deviation of (0,89), while the Arithmetic means for the accuracy English concurrence skill was (8,52), with a standard deviation of (1,12), the correlation coefficient (Person)between the two levels the correlation coefficient (0,66) with an error level of (0,004) under the symbolic

level of (0,05) and the symbolic level was more from the error level , so the significant is symbolic .

3-3 Present and relation the eye-arm concurrence with accuracy shooting.

Table (3) Explains Arithmetic mean and the standard deviation with the value of correlation coefficient (R) between the eye-arm concurrence with accuracy shooting.

Variable	Measuring units	Arithmetic means	Standard deviation	Correlation coefficient	Error level	Indications
Eye –arm concurrence	Minuets	18,5	0,89	0,91	0,001	Symbolic
Shooting skill	Degree	6,20	1,02	0,91	0,001	Symbolic

Under the symbolic level of (0,05)

The table (3) shows that Arithmetic means of the eye –arm concurrence test shows (18,5) with standard deviation of (0,89) while the Arithmetic means for shooting from the high jump was (6,20) , the correlation coefficient (Person)between the two levels shows correlation coefficient value of (0,91), with an error level of (0,001) under the symbolic level bigger than the error level Under the symbolic level of (0,05) , so the indication is symbolic .

3-4 discussing the result

Through viewing the tables (2) Justin J. Sebastian and others (15:2009:11) state that eye movements play the key role in the coordination of many of the body actions however the relationship between eye and hand writing during visual guidance when the eyes move between the fixations (points of focus) in saccadic movement while and during reading .

Selective attention is the name that is given to the capacity to select a particular stimulus according to its physical possessions , the way of presentation .Shepherd et al.(1986), Stelmach et al. found out that the manual responses were faster when the target appear in the position within the eye vision movement is prepared . They concluded that there is a kind of connection between eyes and hand responses Laila Craighero , Luciano Fadigo and Giasomo Rizzolatti (17:1999:163f).

The main task of the neuro –motor system is to control the tension and the length of the muscles to generate the required movement in the skeleton. Muscles are controlled by motor –nerve in the spinal cord , by generating a series of actions potentials the response of muscle fiber will change to a constant force if the frequency (repeating)is high enough. Skeletal muscles attaching and moving bones by series of contracting and relaxing movements responding to any voluntary message from the nerve system Roud J .A .whusman(19:2015:2,3,4)

What happened before the action is the neuro-muscular junction takes the primary role in the function of the skeletal muscles since it is responsible for transmitting promoting electrical impulses which are directed from higher neural center (the nerve system)towards muscle fiber to initiate a muscle action , these special kind of electrical impulses resulting a muscle contraction and the

movements achieved ,Michael R. Deschenes ,Carl M. Marsh and William J. Kraemer(18:1995:105).

It had been indicated that the structure and the function of the Nauru-muscular junction can be adapted by training exercises, and this adaptive responses have an impact on the athletic performance. It is clear that the neural muscular conjunction like muscles fibers undertake adaptive responses to endurance training that built a delay the onset of fatigue (ibid:103- 107).

In terms of planning for optimum performance , the learner require a wide range of skills with the technique besides the ability to take the right choice about which or how to use and where to use .The learner will test all these three physical activities (skills ,technique ,ability) to identify the skills that of a central connection to perform activities and the learner will analyze his level of skill to plan for performance, Brian George (13:2022:2).

Skills can be developed and improved by the time through practicing combining our knowledge with our abilities .For both perceptual , cognitive and motor abilities or a combination of two .Most of our abilities that used to do certain action are a combination of the two and we can refer to as the psycho-motor abilities ,(ibid:13).

It has been indicated through activation of the very first trials of learning was contrasted with the late trials of learning there is a strong activation of the visual system indicating visual coding of sequences followed by activation of motor recoding . Hard wick et al. (2013) found that the motor learning is strongly and systematically associated with the left dorsal premotor activation and it constitutes the fundamental of motor learning which comes from visual motor

control of movement through selection and updating the motor responses relating to the visual cues, Sara Palmis and others (20:2017:17-20)

Through viewing the tables (3)

Most of the motor skills require a wide range of concurrence or agreement between the eye and the hand especially in hand ball this concurrence especially rises during the scoring time towards the player and the goal .The player who has to play the ball to achieve the concurrence and harmony of the vision sense which means to focus on the other player and the hands that achieve the score and any failing in this concurrence or the agreement between the hands and the eye will cause the activity to failure and losing the ball, since the weakness of the concurrence comes as the result of the weakness of motor sensation or delaying in the connection between the neural and the muscular systems (2:1996:15)

There is a neural -muscular concurrence connection with its both kinds eye-arm , in shooting accuracy with a symbolic connection , there is concurrence increase with increase in shooting accuracy . That the concurrence means the correct motor performance that is connected with the required speed , accuracy and elegance with economic in effort and errors .This viewed as watching the athletics performance of high level with other athletics who are beginners . (1:205:1997) .

It is emphasized that there is a necessity to distinguish the player from the concurrence of the whole body between the upper limps with the lower limbs (arms –legs) besides the eye- arms concurrence . Concurrence considers as one of the most important processes which helps the player to success and achieve his motor duties (9:157:1999) .

Shooting can be considered as one of the important motor skills in hand ball sport and all the motor activities main goal is to shoot on the oppose goal. This is the most important duties in hand ball sport . The result of the match depends on the accuracy in performing this skill .This importance is confirmed by (Mohammed Taufeq 10:1999:44)as he mentioned that all the basic principles ,games ,and studied plans are useless if not awarded with scoring a goal, (10:1994:102)

Accuracy considered fundamental in most of the sport activities , it also has the key role in successful shooting skill and accuracy defined as the " individual's ability to control his voluntary movements to direct something towards something else" (4:1983:139) .

Accuracy means " the ability to solve the motor –neural concurrence " :1983:7) (7

Accuracy as "the ability to direct the voluntary movements that the person performs towards a specific goal" .he also emphasize that directing voluntary movements towards specific goal requires the full controlling of the voluntary muscles to direct them to that specific goal , this also requires the nerve signals that are directed to the muscles to be from the nerve system to be firmly directed whether it was directed toward the moving muscles or the resting ones so as to move in the required direction , with the demanded accuracy to get the required goal . this goal could be competitive one as in games like boxing, fencing or it could be in an open field as in the competitive field as basketball or hand ball or it could have a goal keeping as in football or tennis (1:1997:55).

4- Results and Recommendations

4-1 Results

Through watching the results the researchers found out the following results "

1.There is a symbolic motor concurrence in eye –arm with the English hand writing skill .

2.There is motor relations in shooting accuracy with the eye-arm concurrence and it is symbolic .

3.There is concurrence between the eye –arm and shooting accuracy

4-2 Recommendations

In the light of the results there are recommendations which are as follows :

1.Focussing on the training of the shooting accuracy with all its kinds so the students can continue doing their motor duties as long time as possible .

2.Giving the neural –muscular concurrence the importance in the training program s to develop all the items that are connected to this process in term of (speed, elegance , balance and moving .

3.Make the neural muscular one of the processes through which the students are chosen to get higher levels and we recommend to do a similar researches a like .

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