



## **The effect of physical-skilled exercises in the development of motor balance for Taekwondo Athletes**

Saeed Alwan Hilal

Rafaa Rashid Chaleefah

Diyala Education Directorate

### **Abstract**

The aim of the research is to develop the motor balance of taekwondo athletes, as special physical-skilled exercises have been used as part of the training curriculum prepared by the trainer.

With regard to the curriculum used, the experimental curriculum designed by the same group with the test (Pre--Post-) was used on a sample of the National Center for the Care of Sports Talent for Taekwondo, which numbered (6) young players selected in the deliberate manner, and the researchers performed the Pre- test of the research sample, after which the physical-skill exercises were used for (8) seven and by (4) Training units, after which the Post- test of the research sample was conducted, and through the findings of the researchers concluded that the exercises used developed a remarkable development in the motor balance of taekwondo athletes.

### **1- Introduction:**

The world is witnessing a tremendous development programmed not random in all sports sciences and from the science of sports training, relying mainly on modern training methods, to improve and reach the achievement to the highest possible level, so we have to keep up with these developments that have occurred in the science of training and interact with them with the correct scientific steps based on the results of previous research and studies, and it is the duty of sports training to prepare the player physically and skillly to face specialized sports activity, The physical-skill exercises through which we seek to develop the motor balance of the athlete's body, increase his ability to overcome unbalanced situations during the fight, and the motor balance has an effective impact on the athlete by directing strikes and kicks to the competitor and achieving the greatest number of points during the single round, and the importance of research is reflected in the use of physical exercises - the skill through which we seek to develop the motor balance of young taekwondo athletes.

The problem of research lies in the characteristic of balance, which is an important capabilities that play an active role in taekwondo sport because of the specificity and difficulty of the sport at the same time, requires focusing on it by the coach and players in the implementation of training units in the previously prepared curriculum, as the ability of motor balance is one of the basics that should be focused on and not forgotten for what to achieve the best performance during the fight, and through the research and studies previous and observation and continuous follow-up, Note the need to focus more on the ability of motor balance in the curriculum of trainers, because they believe that this ability comes from the development of the characteristics of strength, speed, endurance and agility and not to give it its health from the training unit, so the researchers studied this problem.

The aim of the research is also to use physical exercises - skilled in the development of the motor balance of young athletes, as well as to recognize the impact of these exercises in the development of the motor balance of the research sample, while the researcher imposed differences of moral significance and in favor of the Post- test in the effect of physical exercises - skill on the motor balance of taekwondo athletes.

## **2- The research approach and its procedures:**

### **2.1 Research approach:**

The researchers used the experimental approach to suit the nature of the problem and the objectives of the research, as the experimental approach aims to "make a deliberate and controlled change to the specific conditions of reality or phenomenon that are the subject of the study and to observe the effects of this change in this reality or phenomenon" (Toqan Obeidat:2004,240), and the researcher adopted the semi-tight experimental design with the same group with Pre- and Post-tests).

### **2.2 Search sample:**

The nature of the problem to be studied and found led to the selection of the sample, as the research sample was deliberately selected from the players of the National Center for the Care of Sports Talent for Taekwondo, and the number of members of the sample (6) players, (blocked,2001, 165) "the researcher can be used to choose the sample to generalize the results to all, especially when the sample is homogeneous, a small sample is sufficient to represent the community of origin." The research sample was selected in accordance with the following conditions:

- Rush and desire to participate in the search experience.
- The sample members are close in terms of training experience.
- Close to the mhari level.
- Commitment and regularity to training.

In order to avoid factors affecting the results of the research, the researcher extracted the homogeneity of the research sample by calculating (height, weight, time age (player age) and training age) homogeneity was performed by the variation factor and the results showed the homogeneity of the sample members by the variation factor, thus the research sample is as homogeneous as in table (1).

**Table (1)**

**The description of the research sample shows the variables of height, weight, age and training age.**

<b>Statistical treatments Variables</b>	<b>Unit of measure ment</b>	<b>Arithmetic medium</b>	<b>Standard deviation</b>	<b>Variation coefficient</b>
<b>Length</b>	<b>poison</b>	<b>160,83</b>	<b>2,04</b>	<b>1,26</b>
<b>Body mass weight</b>	<b>Kg</b>	<b>53,50</b>	<b>1,87</b>	<b>3,49</b>
<b>Age (player's age)</b>	<b>month</b>	<b>188,66</b>	<b>2,42</b>	<b>1,28</b>
<b>Training age</b>	<b>month</b>	<b>38,83</b>	<b>1,94</b>	<b>4,99</b>

### **2.3 Devices, tools and tools used in research:**

- Arab and foreign sources.
- Interviews.
- Measurements and tests used.
- Observation and experimentation.
- Test results registration form.
- Statistical means.
- A medical balance to measure weight.
- Metric bar to measure length.
- Balance ball number (6).
- Rubber ropes number (6).
- Sponge rug (20) cm high.
- Wheelless ski boards and 6 wheels.
- A challenging tablet device to measure motor balance.

## **2.4 Test used in search:-**

Mobile Balance Test: (Saeed Alwan Hilal:2015: 65)

**Test name:** - Mobile balance test.

**The goal of the test:** - measuring the ability to balance.

**Tools:** - Challenge Disc device for the mobile balance counter with its calculator, wire (USB) moves the balance disk to the calculator (Yasser Najah: Ahmed Thamer: 2015: 208)

### **Test instructions:-**

- The test type and level must be selected on the Challenge Disc.}
- The player must stand on the challenge tablet.
- The player must be aware of the specific level of the test, which is the training measure and contains five levels starting from the number (5) which is the easiest levels and ends with the number (1) which is the hardest, as this level consists of (9) exercises and these exercises perform in a specified time, as 6 exercises of which the time of each exercise is 20 seconds and the exercises are (1), 2, 4, 5, 7, 8), and the remaining 3 exercises are 10 seconds each time (3, 6, 9), and the rest time between one exercise and the last 7 seconds, to be the total test time (3.26 minutes).
- The player should not leave the challenge disc device until after the end of the time allocated (26.3 minutes) for testing and extracting the result through the body.

### **Performance specifications:-**

The player stands on the challenge tablet device and the program operator chooses level 5 so that the program gives the laboratory the signal to start testing, the laboratory begins trying to make the small circle in the circle of exercise no. 1 and the program score points for the laboratory as in figure (1), and then the final result of the test appears on the calculator screen and the highest result of the test is (10) degrees.



Figure (1)

The balance test on a tablet shows the challenge with its calculator.

### **2.5 Pre- test:**

The Pre- test was conducted on a sample of the 6 players of the National Sports Talent Care Centre for Taekwondo on Friday, 10 January 2020, at 10:00 a.m.

### **2.6 Skilled physical exercises used in research:**

In order to achieve the goal of the research, the researchers used some of the physical and mahar exercises of taekwondo on the research sample of (6) players in order to develop their motor balance and varied these exercises from (balance exercises for the leg, balance exercises for the arm, mobility exercises) as well as the use of balance ball, These exercises continued to be carried out within the training curriculum prepared by the coach for (8) weeks and in fact (4) training units per week, and began the use of physical-skill exercises on Saturday, 11 January 2020 and until Friday On March 6, 2020, the number of training units (32) units was used in the physical-skilled preparation part of the main section of the training unit, and took the time of training for special physical-skill exercises. With a dynamic balance of (15-24) minutes, if the difference in time in the training units to the ripple in the distribution of training loads within the curriculum prepared by the coach.

### **2.7 Post- test:**

The Post- test of the members of the research sample was conducted on Saturday, March 7, 2020 at 10:00 a.m. at the National Center for The Care of Taekwondo Sports Talent In Baghdad, and the same conditions and conditions of Pre- testing were observed.

## 2.8 Statistical means:

The researchers used the statistical bag (spss) to extract statistical treatments in order to obtain the results of the research.

### 3- View, analyze and discuss search results:

#### 3.1 Presentation, analysis and discussion of motor balance test results:

##### 3.1.1 Presentation of computational circles and standard deviations in the results of the Pre- and Post- tests in the motor balance test.

Table (2)

It shows the computational circles and standard deviations in the motor balance test for Pre- and Post- tests.

audition	Unit of measurement	Pre- test		Post- test	
		Q	±	Q	±
Motor balance	Grade	3,83	0,75	5,16	0,75

Table 2 shows that the motor balance test, with a mathematical average in the Pre- test (3.83) and a standard deviation of (0.75), while the arithmetic average in the distance test was 5.16 and a standard deviation of (0.75).

##### 3.1.2 Presentation of the results of the T test between the results of the Pre- and Post- tests in the motor balance test, analysis and discussion.

Table3

It shows the differences in computational circles, its standard deviation, the calculated value of T , and the indication of the differences between the Pre- and Post- tests to test the motor balance.

audition	Unit of measurement	so	P	Calculated value	Error level	Significance of differences
Motor balance	Grade	1,33	0,81	4,00	0,002	Moral

Moral at the error level (0.05) if the error is smaller than (0.05) and the tower of freedom 5.

In the motor balance test, the difference in computational circles between the Pre- and Post- tests (1.33) and a standard deviation of (0.81) was 4.00, while the error level was 0.00. 002) and in front of the degree of freedom (5), and since the value of the error level is smaller than (0.05) of this we infer the morale of the differences at the error level (0.05) between the Pre- and Post- tests and in favor of the Post- test.

### **3.2 Discussion of results**

In the motor balance test, table 3 shows that there is a moral difference and in favor of the Post- test, the researcher attributes this moral difference to the various physical exercises - skill prepared within the training curriculum and the focus on motor balance, which has positively affected The general balance of the research sample, as confirmed by (Khaled Mahmoud:2007:33) "The Taekwondo player needs flexibility, agility and balance because it is one of the most important physical and motor abilities that must be available in it," he said. The Taekwondo player needs to balance throughout the Pomsy stages to perform various movements of kicks and strikes, whether offensive or defensive, as well as the stability movements used within the defensive movements for a specified period of time and according to the type of movement.

In addition, "The balance is one of the basic physical elements and is not a factor in competitive performance, such as taekwondo and wrestling, and many taekwondo experts emphasize the importance of balance as one of the motor capabilities necessary for the taekwondo player to achieve the right motor performance."

## **4- Conclusions and recommendations.**

### **4.1 Conclusions:**

Through the results of the indication of the differences between the Pre- and Post- tests, the researcher concluded the effectiveness of physical-skill exercises in the development of motor balance.

### **4.2 Recommendations:**

- 1- Adoption of physical-skill exercises for motor balance.
- 2- The need to adopt the principle of progressive progression during the preparation of training curricula.
- 3- The need for other studies aimed at the consistent balance of Taekwondo athletes.

### **References :**

- Khaled Ahmed Mahmoud, building a training-style curriculum in teaching some basic skills in Taekwondo to primary school students: (Master's thesis, Unpublished, Mustansiriyah University, Faculty of Basic Education, Department of Sports Education, 2007).

- Toqan Obeidat et al.; scientific research its concept, performance and methods, i1, (Amman, Dar al-Fikr, 2004).
- Saeed Alwan Hilal, impact of a proposed training curriculum in some biomechanical variables and rhythmic adjustment of the performance of poms movements in young Taekwondo players, (Doctoral Thesis), Faculty of Basic Education, Diyala University, 2015.
- Mahmoud Shukr Saleh; Design of the balance test accompanying the main kicks of taekwondo players, published research, Rafidain Journal of Sports Sciences, Volume (14), Issue (39), 2008.
- Wajih Mahjoub; Origins and Methods of Scientific Research , i 1:(Amman, Dar al-Mahjoub, 2001).
- Yasser Najah and Ahmed Thamer; Sports Kinetic Analysis , Iraq, Najaf Al-Ashraf, Dar al-Diyeh Printing, 2015.

#### Model for training unit

**Week: 1st**

**Time: 18 minutes**

**Degree of training pregnancy: average**

Unit parts	Intensity of training	Exercise code	Performance time	Number of iterations	Comfort between repetitions	Training time
Skilled physical preparation	60%	A1	20 Tha	3	40th	3 mins
	65%	A2	20 Tha	3	40th	3 mins
	65%	B1	20 Tha	3	40th	3 mins
	70%	B2	20 Tha	3	40th	3 mins
	75%	C1	20 Tha	3	40th	3 mins
	75%	C2	20 Tha	3	40th	3 mins
	Total		18 minutes			