Motor coordination as one of the drivers of skill performance among judo buddies

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Introduction and research problem:

The scientific renaissance and technical progress that the world is witnessing in our contemporary time in various fields, including physical education and sports, prompts us to find the best training methods to achieve the desired goals of sports training and reduce the gap that is growing between countries in the sports field, which forces coaches to take into account the causes of science in re-examining. And evaluating the training programs used based on training programmes, methods and methods that would reduce the differences that have emerged between developed and developing countries in all factors related to sports training and which positively affect the development of the level of skill performance for all sports activities, especially judo.

Sports training is an educational process that is subject to scientific and educational foundations and principles that include raising and preparing young people with the aim of getting them to achieve the highest possible sporting level during competition and working to maintain it for the longest possible period in a specific type of sporting activity through organized planning and scientific application. (11:17)

Tariq Muhammad Jaber (2002 AD) explains that training programs are the scientific method and the basis for the training process in order to achieve its goals, and the goal that the trainer seeks is not achieved except at the end of the established program, which is considered one of the elements of planning, and without it, the planning process is infeasible and becomes incapable of achieving what it aims. mechanism. (6:7)

Motor coordination is one of the most important motor abilities that must be focused on in training since childhood, as developing motor coordination to a sufficient extent improves the motor and functional condition of the individual in performing sports movements in the best way, especially complex ones. Motor coordination also depends on the safety and accuracy of muscle and nerve functions and their connection together. In performing a specific job. Therefore, developing compatibility through appropriate methods, including physical exercises, in light of the goals and duties contained in education plans, leads to raising the ability to perform in all motor and skill aspects. (8: 378)

Furat Jabbar (2007) points out that the concept of compatibility means organization-coordination-

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arrangement - tabulation. Harmony is the arrangement and organization of the effort exerted by the organism according to the goal, and compatibility varies according to the science in which it is researched. In physiology, it means the work of the muscles, and in functional anatomy, it is the fixed organization of the work of the body. A single muscle or the coordination of nervous and muscular action, and in biomechanics, the regulation of force variables, and Fleishman defines it (Fleish Man refers to an individual's ability to perform a number of complex movements simultaneously, while Larson and Barrow refer to it as an individual's ability to combine movements of different types within one framework. (10:2)

Wajih Mahjoub (2001 AD) defined it as "a process linked to the capabilities of the motor system to regulate the internal force with the influential external force. The force varies according to the motor act and previous experiences of the individuals, but the central system remains the basis for the compatibility process." (20:39)

Nabil Mahmoud Shaker (2005 AD) points out that "compatibility appears in movements that depend on physical or athletic work. Compatibility varies according to the organism's motor experiences and the extent to which it practices them. The nervous system affects the basis of the harmonic process because it is responsible for interpreting information and sending it through the nerves to all parts of the body." It is the regulator of muscular action, the physiological effort of the circulatory and respiratory system, and the muscular actions that contribute to regulating motor behavior in a way that makes it match the goal to be achieved. (17:27)

Motor coordination is linked to the ability of the motor system and the central nervous system, in which the process of understanding, assimilating, analyzing, and perceiving the movement or motor program takes place. The nervous system is the primary center for coordination because it regulates effort by regulating the action of the force exerted by the muscles in order to match the skill to be performed. Motor coordination is also linked to the work of the internal organs and the extent of their ability to organize and coordinate the effort exerted according to the goal by building physical and motor qualities such as strength, speed, endurance, and agility... and others, Therefore, learning movements occurs to different degrees, and motor coordination processes are not equal between individuals as a result of differences in physical and motor abilities and characteristics between learners or players. (16:40)

Both Ahmed Abu Al-Fadl Hegazy (2006 AD) and Muhammad Hamed Shaddad (2010 AD) explain that the sport of judo was derived from "jiu-jitsu" wrestling.Jujitsu, which was first known in Tibet, then moved from there to the lands of China and then to Japan in the seventh century BC. The sport of judo was derived from (Jigorokano), who is considered the

godfather of the sport of judo and the founder of modern judo, as he studied all the movements and holds and studied the types. Different types of wrestling. He created a dictionary of all these movements after removing the dangerous ones so that they could be practiced after that as a sport. After this study, he came up with a new method called "Judo," which means "flexibility style" or fine art. (1:6,7)(12:1)

Ihab Kamel Afifi (2006 AD) adds that the sport of judo is one of the most widespread games, especially among the countries of the sophisticated world. It has become an international character and has become popular among all members of the public and of all ages. The game has become federations in various parts of the world, supervised by the International Federation and its center being the World Judo Academy. (Kodokan). (3:16)

Hanafi Mahmoud Mukhtar (2016 AD) believes that "the coach must work to establish the basic skills so that they are performed accurately and masterfully during training, and that they are performed in conditions similar to the conditions of the match, such as complex exercises with a colleague." (4:19)

Nevin Hussein Mahmoud (2014 AD) affirmed that the judo player's acquisition of special physical qualities is considered a prerequisite for learning and applying motor skills, as they are linked to the level of skill performance, influencing and being affected by it, and raising the player's ability to adapt to changing conditions within the match in an effective manner and to perform distinctively with economy of effort. The extravagance. (19:92)

Ahmed Abu Al-Fadl (2006 AD) believes that the basic skills of judo are considered the main foundation through which the level of the player in that sport is established. Without mastering and teaching these basic positions, it is not expected to achieve a high level of training that will eventually reach the championship level, and these conditions are considered the basic foundation. Which the player depends on during his training life. (1:18)

Motor coordination constitutes an important factor in learning the basic skills of judo, and developing motor abilities in general without focusing on motor coordination negatively affects performance. Therefore, it is very important that the warm-up for the judo training unit includes general and specific exercises for the muscle groups that the buds need during... Educational or training unit.

The researcher noted that he is a judo coach at a clubCity Club in Benha; There is a clear weakness in the speed of development of performance among judo buds, so the researcher decided to study the effect of some motor coordination exercises in developing some judo skills among buds.

Search goal:

The research aims to identify the effect of motor coordination training on judo buds, by identifying:

1- The effect of the proposed program on motor compatibility measurements is under investigation.
2- The impact of the proposed program on the skill measurements under study.

Research hypotheses:

1- There are statistically significant differences between the average of the pre-measurement and the average of the post-measurement for the control group in measurements of motor coordination and measurements of the skill level under investigation in favor of the post-measurement..

2- There are statistically significant differences between the average of the pre-measurement and the average of the post-measurement for the experimental group in measurements of motor coordination and measurements of the skill level under investigation in favor of the post-measurement..

3- There are statistically significant differences between the means of the two post-measurements of the control and experimental groups in the measurements of motor coordination and the skill level measurements under study in favor of the post-measurement of the experimental group.

Definitions used in the research:

- **Motor compatibility:**

It is the individual's ability to move two or more different muscle groups in two different directions at the same time. (18:71)

- **Judo:**

It is one of the types of individual matches in which the attacker relies on the energy and strength of his opponent to his advantage, relying on the optimal use of the mind in how to exploit it to overcome the opponent with the least effort. (5:37)

Reference studies:

1- A study by Ibrahim Abdullah Spectrum (2018AD) (7) entitled "Motor coordination exercises and their effect on the level of performance of some basic skills of the game of handball." The aim of the research is to prepare coordination exercises that are compatible with the research sample, and to find out the extent of the impact of coordination exercises on the level of some basic skills of the game of handball. The researcher used the one-group experimental approach, and then the researcher chose the sample intentionally and represented (12) young players (12-14) years old for the Al-Shuala Sports Club in the game of handball. Matching exercises for the game were used, and the researcher applied them to the research sample. The number of training units reached (48) units, (4) units per week for (12) weeks. After completing the training curriculum, the researcher conducted statistical transactions on the results she obtained from the pre- and post-tests, and the most important conclusions she obtained were: Neuromuscular coordination exercises achieved their goals. The use of combinatorial exercises showed significant differences in favor of the posttests in all tests. It showed that compatibility exercises improve the level of performance of basic handball skills.

2- A study by Amani Fathi Muhammad Mahrous (2016 AD) (2) entitled "The effect of motor

coordination exercises on improving the accuracy of passing and shooting in handball for first-level female students at the College of Physical Education, University of Bahrain." The study aimed to reveal the effect of motor coordination exercises on improving the accuracy of passing and shooting in handball. Handball for first-level female students at the College of Physical Education at the University of Bahrain. The study used the experimental approach with a two-way design for equal groups (experimental and control) and compared the pre- and post-test results for the two groups to suit the nature of the problem. The study sample consisted of 40 first-level female students at the College of Physical Education at the University of Bahrain. The study tools were Arabic and foreign sources, questionnaire, observation, tests and measurement. The study addressed two main axes: The first axis: motor compatibility. The second axis: The basic skills in handball, which are: the ball pass skill, the shooting skill. The results of the study indicated that there were statistically significant differences between the pre- and post-tests of the compatibility tests for the control study group and in favor of the post-tests in the eye-hand compatibility test (tennis balls test), and others. Statistically significant (discussion) in the eye-foot coordination test (the circles drawn on the floor test). This is due to the failure to implement coordination exercises within the educational unit in an intensive manner and to adequately link them with the skills under study.

3- A study by Muhammad Abdullah Muhaibes (2015 AD) (15) entitled "The effect of motor coordination exercises according to the distributed exercise method in developing the skills of crushing and blocking for young people in volleyball." It aimed to identify the level of skill performance of players with the skills of smashing and blocking, as well as preparing Special exercises to develop the motor coordination characteristic of junior volleyball players. It also aimed to identify the effect of motor coordination exercises according to the distributed exercise method in learning the skills of crushing and blocking in volleyball. To achieve these goals, the researcher used the experimental method, while the research sample represented the juniors of the Rumaitha Volleyball Club. Airplane - Al-Muthanna - Iraq. The results of this study indicated that the exercises contributed to developing motor coordination according to the distributed exercise method and learning the skills of smashing and blocking the wall with volleyball.

Research Methodology:

The researcher used the experimental method by designing two groups, one experimental and the other control, with two measurements, "pre and post," to suit the nature of the research.

Research population and sample:

The research community included the budding stage trainees in judo at a clubcity club in the city of Banha, and their number is (65) buds. The main research sample was (16)

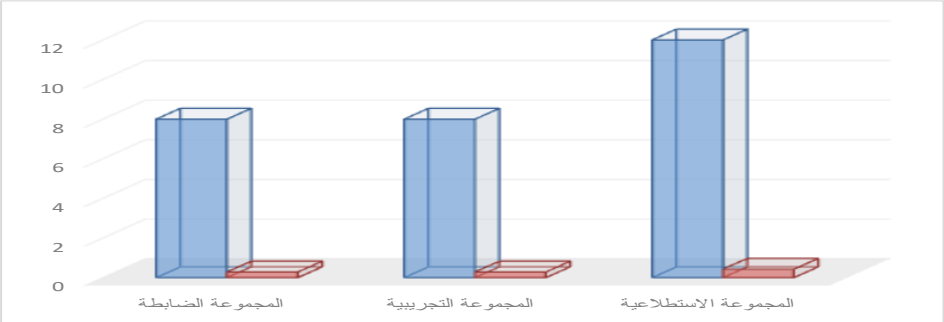
buds, and they were divided into two groups, one experimental and numbering (8) buds, and the other a control group and numbering (8) buds. A number of (12) buds were also used as a sample. Exploratory, in order to calculate the scientific coefficients for the tests used in the research, and Table (1) and Figure (1) show the description of the research sample.

Schedule (1)

Description of the research sample

Comparison		the number	percentage %
a samplesearchthe basic	the grouptheOfficer	8	28.57%
	Experimental group	8	28.57%
a sample searchreconnaissance		12	42.86%
Totala sample search		28	100%

Figure (1) showsDescription of the research sample



Homogeneity:

Schedule (2)

Homogeneity of the research sample membersinMeasurements of growth rates n=28

Measurements		middle	mediator	standard deviation	torsion
Rate measurementsatthe growth	Chronological age	9.29	9.00	0.46	1.00
	height	144.14	145.00	2.24	-1.26
	the weight	43.57	44.00	3.25	0.44

It is clear from table (**2), and Figure (2)**The values of the skewness coefficients in measurements of growth rates"under consideration"It may range between(-1.26, 1)These values are limited to ±3.

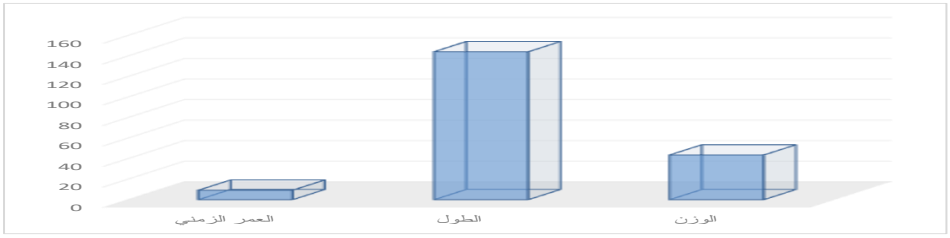


Figure (2) showsHomogeneity of the research sample members in measurements of growth rates

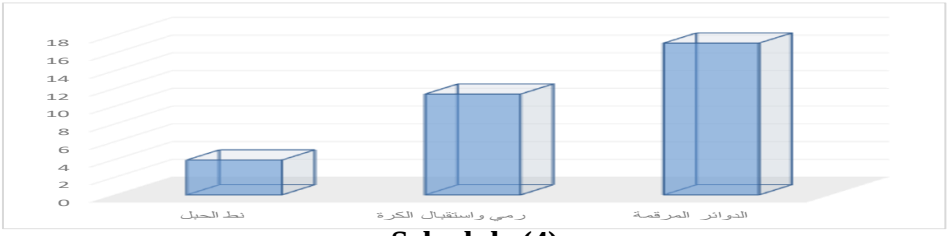
Schedule (3)

Homogeneity of the research sample membersIn measurements of motor coordination "under investigation" n=28

Measurements		middle	mediator	standard deviation	torsion
Motor coordination measurements	Jumping rope	3.93	4.00	0.90	-0.51
	Throwing and receiving the ball	11.36	11.00	1.03	-0.58
	Numbered circles	17.11	17.00	1.42	-0.37

It is clear from table (**3), and Figure (3)**The values of torsion coefficients in motor compatibility measurements are "under investigation." It may range between(-0.58, -0.37)These values are limited to ±3.

Figure (3) showsHomogeneity of the research sample members in measurements of motor compatibility "under investigation"



Schedule (4)

Homogeneity of the research sample membersIn skill measurements "under investigation" n=28

Measurements		middle	mediator	standard deviation	torsion
measuremen	Oshiro Okimi	2.75	3.00	0.44	-1.22
	Meiji-Yoko-Okimi	2.71	3.00	0.46	-1.00
	Hidari-Yoko-Okimi	2.46	2.00	0.51	0.15
	Miji - Mai Mwari - Okemi	1.36	1.00	0.49	0.63
	Hidari-Mai Mwari-Okeme	1.29	1.00	0.46	1.00

It is clear from table (**4), and Figure (4)**The values of skewness coefficients in skill measurements are "under investigation." It may range between(-1.22, 1)These values are limited to ±3.

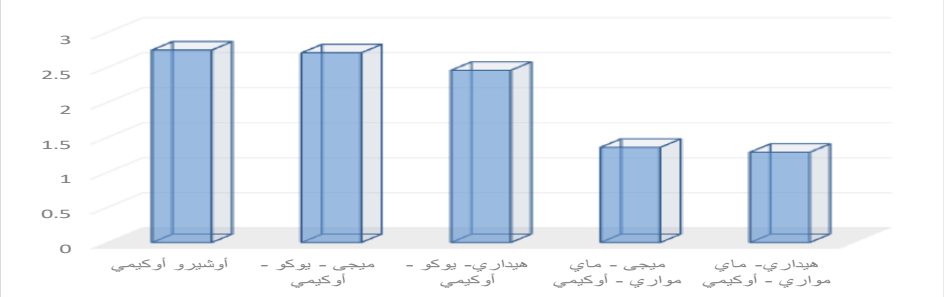


Figure (4) showsHomogeneity of the research sample members in the skill measurements "under investigation"

Data collection methods and tools:

Registration and data dump forms:

The researcher prepared a set of registration cards for the research sample members to record data, Which:

- A form for recording data for each individual in the sample. attached (**2)**
- Expert opinion survey formTo determine the most important judo skills that suit the nature of the research. attached **(3)**
- Expert opinion survey formAbout motor compatibility tests that suit the nature of the research. attached **(4)**
- Expert opinion survey formAbout rationing contenttraining programThe proposal. attached (**5)**

Tools and devices used in research:

- Training hall.
- Measuring tape and sticky markers.
- Judo player tasks.
- Stopwatch and buzzer.
- Inscribed ruler.
- pregnancy.
- Balls.
- Judo mat.

Devices used in the research:

- Scale to measure height and weight.
- video camera for photography (SONY).
- PC.

Measurements of motor compatibility are under investigation:

The researcher reviewed the references that dealt with various tests and standards, then the researcher presented them to the experts, and the following tests are the final tests that were reached for use in the research:

1- Rope jumping test.

2- Throwing and receiving the ball test.

3- Numbered circuit test. (13: 400-410)

measurement level the performance Skills:

He rose researcher By measure level the performance Skilled in a way exclusion, on road filming Buds during performance Skills Restriction search

By video),then an offer the performance Registrar on Arbitrators And their number(3)Arbitrators by Devices an offer High the quality,And it was done give all Skill (10) grades As stated in the union form, And it was done account degree all player from during Exclude higher degree And less degree then account middle The three arbitrators' grades.

the studyreconnaissance:

The researcher roseBy conductingThe exploratory study on a sample consisting of (12)From judo shoots, in the period fromFrom 5/2/2022 to 5/16/2022.

I aimedthe studyreconnaissance:

- Recognitiontheaset it up AndaTools used.
- RecognitionMeasurements usedinProposed programmeAnd the measurement method.
- Identify the suitability of the proposed program exercises for the research sample.
- Rationing the training load.
- Calculating scientific coefficients for the tests used under research.

Resultsreconnaissance:

- Define theaDuatAndtheaset it up used.
- to setMeasurement method andMeasurements usedinProposed programme.
- The suitability of the proposed program exercises for the research sample was identified.
- The training load was rationed.
- Scientific coefficients were calculated for the tests used under investigation.

Scientific parameters for the tests used under research:

Scientific parameters for the measurements used in the study:

sincerity The concept "composition":

The researcher calculated the validityThe measurements used are under investigationUsing the validity of the concept or construct type “differences between groups” using the lowest interquartile validityYesAnd the highest springYesA sample of (12)playerOf the exploratory sample, the tests were conductedResearch, and this is shown in Table (5, 6).

Schedule (5)

The arithmetic mean, standard deviation, “t” value, and its significance between the lower quartile and the lower quartileHighest in motor coordination measurements “under investigation” n1=n2=3

Measurements		Lower spring		Top spring		"F" value	"t" value
		s	±p	s	±p		
Motor coordination measurements	Jumping rope	4.33	0.58	7.00	1.00	2.67	4
	Throwing and receiving the ball	11.67	0.58	17.00	1.00	5.33	8
	Numbered circles	14.67	0.58	10.00	1.00	4.67	7

The tabular value of “t” at a degree of freedom (4), and a level of 0.05= 2.776

It is clear from Table (5)**, and Figure (5)**The calculated “t” value is greater than the tabulated “t” value at a degree of freedom (4) and a significance level (0.05), which indicates that the “t” value is

statistically significant between the lower quartile and the quartile.the aboveWhich indicates thatIn measurements of motor coordination "under investigation"It has the ability to show differences between groups.

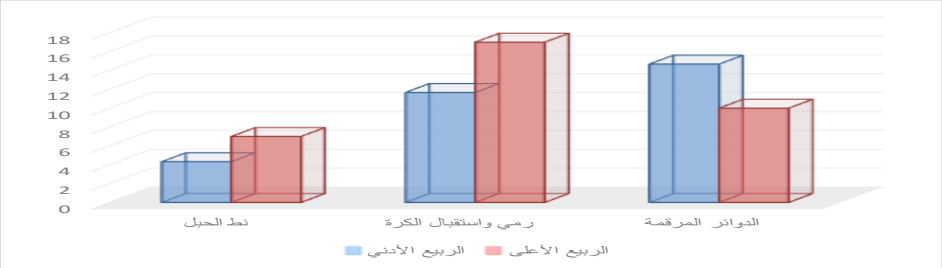


Figure (5) showsThe arithmetic mean, standard deviation, "t" value, and its significance between the lower quartile and the upper quartile in motor compatibility measurements "under investigation"

Schedule (6)

The arithmetic mean, standard deviation, "t" value, and its significance between the lower quartile and the lower quartileHighest in skill measurements "under investigation" n1=n2=3

Measurements		Lower spring		Upper spring		"F" value	"t" value
		s	±p	s	±p		
measuremen	Oshiro Okimi	3.00	0.00	5.67	0.58	2.67	8
	Meiji-Yoko-Okimi	3.00	0.00	5.67	0.58	2.67	8
	Hidari-Yoko-Okimi	2.33	0.58	4.33	0.58	2	4.24
	Meji - Mai Mwari - Okemi	2.00	0.00	3.33	0.58	1.33	4
	Hidari-Mai Mwari-Okeme	1.00	0.00	3.00	0.00	2	3.46

The tabular value of "t" at a degree of freedom (4), and a level of 0.05= 2.776

It is clear from Table (6)**, and Figure (6)**The calculated "t" value is greater than the tabulated "t" value at a degree of freedom (4) and a significance level (0.01), which indicates that the "t" value is statistically significant between the lower quartile and the quartile.the aboveWhich indicates that the skill measurements "under study" have the ability to show differences between groups.

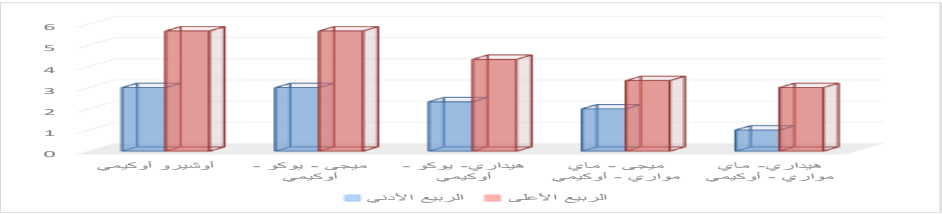


Figure (6) showsThe arithmetic mean, standard deviation, "t" value, and its significance between the lower quartile and the upper quartile in the skill measurements "under investigation"

Consistency:

The researcher calculated stabilityPhysical and skill measurements under considerationusing (Test – Retest) Application and reapplication at a time interval of (7(Days between the two applications, I took a sample consisting of (12)player and represented inThe same survey sampleMeasurementsUnder the same conditions and using the same tools,and table **(7, 8)**It is clearReliability coefficients for the tests under study.

Schedule (7)

Correlation coefficients between application and reapplication valuesinMotor coordination measurements"under consideration" n=12

Measurements		Application		Re-application		"R" value
		s	±p	s	±p	
Motor coordination measurements	Jumping rope	4.00	0.95	4.17	0.94	0.915**
	Throwing and receiving the ball	11.25	1.06	11.08	1.00	0.930**
	Numbered circles	17.00	1.65	17.08	1.73	0.986**

**There is a correlation at the 0.01 level; Where the value of (R) is at the 0.01 level at the degree of freedom (11) =0.684

*There is a correlation at the 0.05 level; Where the value of (R) is at the level of 0.05 at the degree of freedom (11) =0.553

It is clear from Table (7)**, and Figure (7)**The calculated "R" value is greater than the tabulated "R" value at a degree of freedom (11) and a significance level (0.01); Which indicates that the “R” value is statistically significant between the first application and the second application, which indicates that the motor compatibility measurements used are stable.

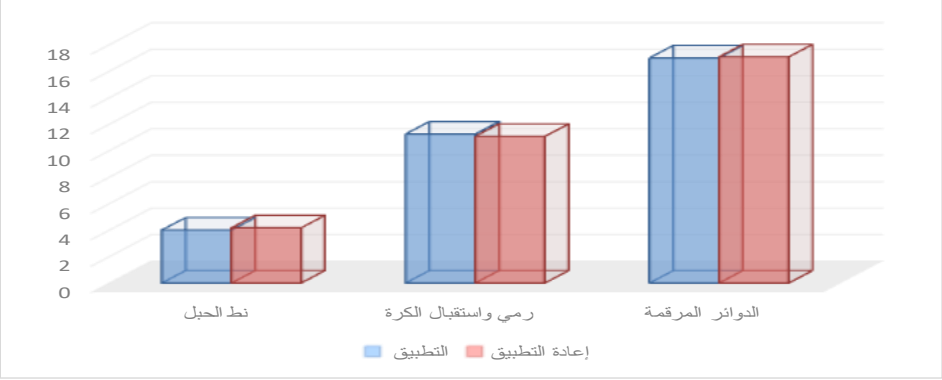


Figure (7) showsCorrelation coefficients between application and reapplication values in motor compatibility measurements “under investigation”

Schedule (8)
Correlation coefficients between application and reapplication valuesIn skill measurements "under consideration" n=12

	Measurements	Application		Re-application		"R" value
		s	±p	s	±p	
Skill measurements	Oshiro Okimi	2.92	0.29	2.83	0.39	0.674*
	Meiji-Yoko-Okimi	2.33	0.49	2.50	0.52	0.707*
	Hidari-Yoko-Okimi	2.33	0.49	2.42	0.51	0.837**
	Miji - Mai Mwari - Okemi	1.33	0.49	1.25	0.45	0.816**
	Hidari-Mai Mwari-Okeme	1.25	0.45	1.08	0.29	0.709*

**There is a correlation at the 0.01 level; Where the value of (R) is at the 0.01 level at the degree of freedom (11) =0.684
*There is a correlation at the 0.05 level; Where the value of (R) is at the level of 0.05 at the degree of freedom (11) =0.553

It is clear from Table (8)**, and Figure (8)**The calculated "R" value is greater than the tabulated "R" value at a degree of freedom (11) and a significance level (0.01); Which indicates that the "R" value is statistically significant between the first application and the second application, which indicates that the skill measurements used are stable.

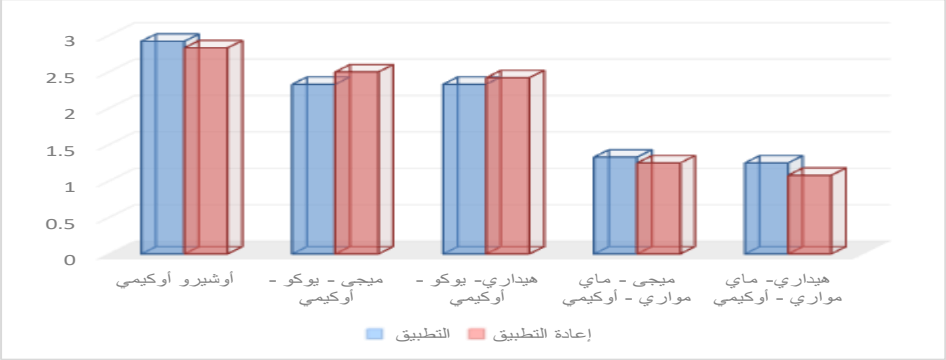


Figure (8) showsCorrelation coefficients between application and reapplication values In skill measurements "under investigation"

Application procedures:

Pre-measurement:

It was completed Procedure Measurements Tribalism on Buds a sample the study the basic in Measurements Physical and skill under investigationin Period From 5/19/2022 AD to 5/22/2022 ADIn a clubCity Club in Benha.

Equivalence of the research sample:

Schedule (9)
Equivalence of the research sampleMeasurements of growth rates"under consideration" N1 = N2 = 8

Measurements		Control group		Experimental group		"F" value	"t" value
		s	±p	s	±p		
Measurements of growth rates	Chronological age	9.88	0.35	9.13	0.35	0.75	1.28
	height	142.00	3.46	145.00	0.00	3	1.45
	the weight	43.38	3.62	43.38	3.62	0	0.00

The tabulated "t" value has a degree of freedom (14), and a level of 0.05 = 2.154

Gedo explains**to(9), and Figure (9)** Equivalence of the control and experimental groups" samplesearchIn the results of measurements of growth rates, it is clear that the calculated (T) value is less than the tabulated (T) value, which indicates that there are no differences between the two groups, which indicates the equality of the two groups.

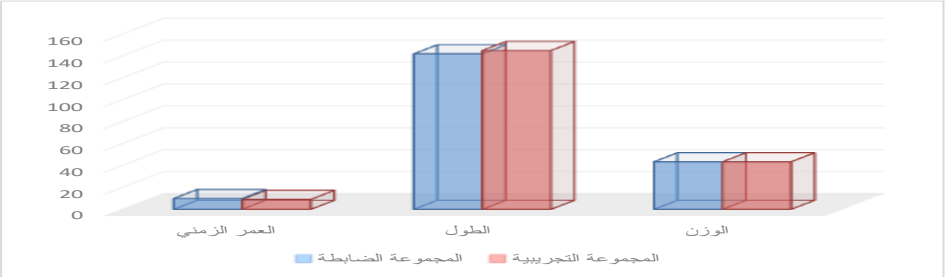


Figure (9) showsEquivalence of the research sample in measurements of growth rates "under investigation"

Schedule (10)
Equivalence of the research sample in measurements of motor coordination "under investigation" N1 = N2 = 8

Measurements		Control group		Experimental group		"F" value	"t" value
		s	±p	s	±p		
Motor coordination measurements	Jumping rope	4.25	0.71	3.50	0.93	0.75	1.82
	Throwing and receiving the ball	11.75	0.71	11.00	1.20	0.75	1.53
	Numbered circles	16.50	1.77	16.88	1.36	0.38	0.48

The tabulated "t" value has a degree of freedom (14), and a level of 0.05 = 2.154

Gedo explains**to(10), and Figure (10)** Equivalence of the control and experimental groups" samplesearch"In resultsMotor coordination measurements "under investigation"; It is clear that the calculated (T) value is less than the tabulated (T) value, which indicates that there are no differences between the two groups, which indicates the equality of the two groups.

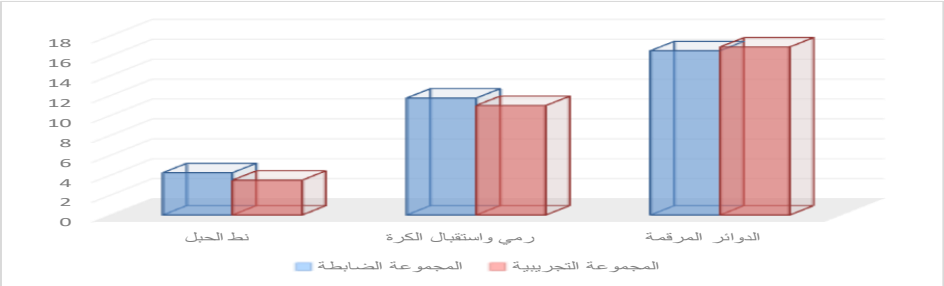


Figure (10) showsEquivalence of the research sample in measurements of motor coordination "under investigation"

Schedule (11)

Equivalence of the research sample in skill measurements "under investigation" N1 = N2 = 8

Measurements		Control group		Experimental group		"F" value	"t" value
		s	±p	s	±p		
Skill measurements	Oshiro Okimi	3.00	0.00	2.50	0.53	0.50	1.65
	Meiji-Yoko-Okimi	2.38	0.52	2.63	0.52	0.25	0.97
	Hidari-Yoko-Okimi	2.38	0.52	2.38	0.52	0.00	0.00
	Miji - Mai Mwari - Okemi	1.50	0.53	1.00	0.00	0.50	1.63
	Hidari-Mai Mwari-Okeme	1.25	0.46	1.25	0.46	0.00	0.00

The tabulated "t" value has a degree of freedom (14), and a level of 0.05 = 2.154

Gedo explains**to(11), and Figure (11)** Equivalence of the control and experimental groups" samplesearch"In resultsSkill measurements "under investigation"; It is clear that the calculated (T) value is less than the tabulated (T) value, which indicates that there are no differences between the two groups, which indicates the equality of the two groups.

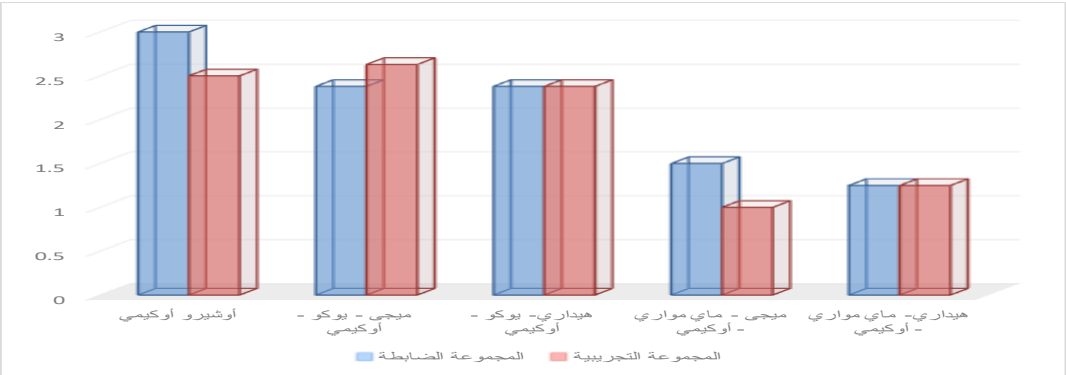


Figure (11) showsEquivalence of the research sample in skill measurements "under investigation"

Basic study:

The proposed program was applied to the research sample in AlifPeriod from 6/2/2022 AD to 8/1/2022 AD.

The proposed physical program usingMotor coordination exercises:

T was appliedDrybatSpecial motor compatibilityIn judoOn the experimental research samplebeginning**From 6/2/2022 AD to 8/1/2022 AD** At a rate of (3) training units per week, which continued(8) ASeven weeks, which made the number of training doses for the research variable (24) A training dose and training time within the training unit amounted to (30) minutes within the main sectionYOf the training unit whose total time is (90(minutes, representing the total variable time of motor coordination exercises) ()720) minute, if it was an alternative!For the physical training part of the unit, which was replaced by motor coordination exercises, the prepared exercises adopted a new vision and approach that takes advantage of developingMotor compatibility and skill levelprivateIn judoInstead!Deviating from the traditional approach, which requires developing the physical aspects separately, taking into account the age and training stage, in terms of the principle of gradation in the difficulty and complexity of motor coordination exercises.;soaIt is known to specialists banaDoing physical exercises in the presence of a colleague and competitor adds motivationaDhafiya LFor budsAs well as!By increasing his concentration and attending to the mental side and the senses associated with it, to carry out the technical task effectively, to ensure motor coordination to perform the required skill effectively.,**The motor coordination exercises for the research included the following features:**

- Adopting proper motor coordination foraBody penalty inaThe disease of skill executed individually and attemptedaIts performance is monitored (totimes i diedcountingdha) inOne exercise.
- Graduation in speedaSkill disease individually refined or increased repetitions ofaIndividual disease of skill Targeted or gradual in both.
- aTarget skill disease with a teammateaAnd colleagues and trying to get along in the performanceaE for that skill.
- Gradually increasing the speed of performing the skill with a colleagueaAnd colleaguesaAnd increase repetition.
- More performanceSkills individually and sequentially (motor movement and progression of speed).adiseaseaMany Repetition and number of motor sentence skills.
- Ensure correction of performance errors by the coach as feedback and work onagreeMove correctly for guaranteeaActive skill disease.

Dimensional measurements:

After completing the basic experiment, the researcher conducted post-measurements of the research sampleDuring the period from 8/3/2022 AD to 8/6/2022 ADThe researcher also took into account that the post-measurements

should be carried out under the same conditions as the pre-measurements.

Statistical treatments: The researcher used the following statistical treatments:

1- percentage. **2- SMA.** 3- HelloBrokerArithmetic 4- unlessDeviationthenormative. **5-** factor except To twist. **6-** "F" value. **7-** s "t". **8-** "R" value.

Presentation and discussion of results:

Presentation and discussion of the results of the first hypothesis:

Which states: There are statistically significant differences between the average of the pre-measurement and the average of the post-measurement for the control groupMotor compatibility measurements and measurementsThe skill level under investigation in favor of dimensional measurement.

Schedule (12)

The significance of the differences between the means of the pre- and post-measurements for the control group in"Motor compatibility measurements"Restrictionsearch" n=8

Measurements		Pre-measurement		Dimensional measurement		"F" value	"t" value
		s	±p	s	±p		
Motor coordination measurements	Jumping rope	4.25	0.71	9.13	1.25	4.88	9.62
	Throwing and receiving the ball	11.75	0.71	16.00	0.76	4.25	11.61
	Numbered circles	16.50	1.77	12.00	0.76	4.50	6.60

The tabulated “t” value is at a degree of freedom (7), and the level is 0.05 = 1.895

Shows a table**(12), and Figure (12)** The significance of the differences between the means of the pre- and post-measurements for the control group in the resultsMeasurements of motor coordination (Jumping rope,Throwing and receiving the ball,Numbered circles); It is clear that the calculated (t) value is greater than the tabulated (t) value, which indicates the presence of statistically significant differences in favor of the post-measurement..

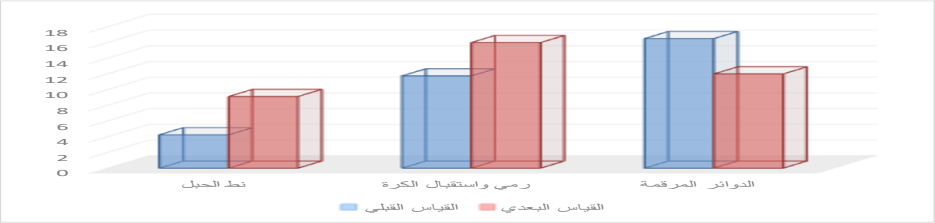


Figure (12) showsThe significance of the differences between the means of the pre- and post-measurements for the control group in motor coordination measurements “under investigation”

Schedule (13)

The significance of the differences between the means of the pre- and post-measurements for the control group inSkill measurementsRestrictionsearch" n=8

Measurements		Pre-measurement		Dimensional measurement		"F" value	"t" value
		s	±p	s	±p		
Skill measurements	Oshiro Okimi	3.00	0.00	6.38	1.19	3.38	8.04
	Meiji-Yoko-Okimi	2.38	0.52	5.75	0.71	3.38	10.89
	Hidari-Yoko-Okimi	2.38	0.52	5.25	0.46	2.88	11.71
	Miji - Mai Mwari - Okemi	1.50	0.53	4.50	0.76	3	9.17
	Hidari-Mai Mwari-Okeme	1.25	0.46	4.00	0.76	2.75	8.77

The tabulated “t” value is at a degree of freedom (7), and the level is 0.05 = 1.895

Shows a table**(13), and Figure (13)** The significance of the differences between the means of the pre- and post-measurements for the control group in the resultsSkill measurements under investigation(Oshiro Okemi, Meiji-Yoko-Okemi, Hydari-Yoko-Okemi, Meiji-water Mwari-Okemi, Hydari-water Mwari-Okemi); It is clear that the calculated (t) value is greater than the tabulated (t) value, which indicates the presence of statistically significant differences in favor of the post-measurement..

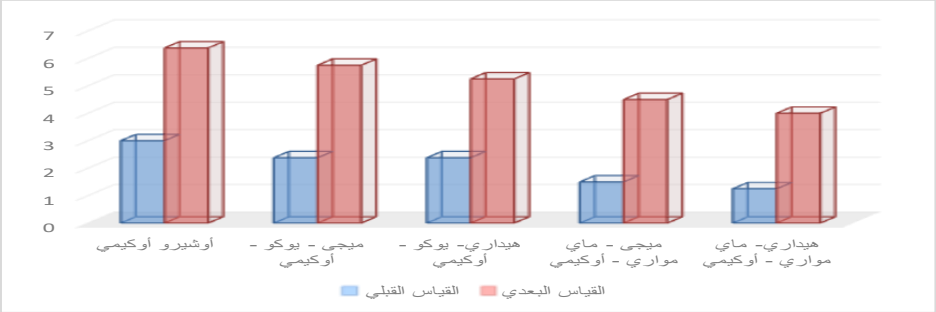


Figure (13) showsThe significance of the differences between the means of the pre- and post-measurements for the control group in the skill measurements “under investigation”

Scientific research indicates such as:**Spectrum Ibrahim Abdullah (2018AD) (7), Amani Fathi Muhammad Mahrous (2016AD) (2), Muhammad AbdullahMhibis(2015 AD) (15)** Training in the traditional way in judo has great benefits in developing skillsBudsAndto improve Their performance; AndThis type of training involves intense repetition of the basic movements and techniques of judo,Which YShare in development Their fitness elements, This approach also relies on routine training to

enhance the athlete's ability to executeSkillsAccurately and effectively.

The researcher attributes the existence of statistically significant differencesa Between the averages of the pre and post measurementsFor the control group in variablesMotor compatibility and variablesSkill under investigation To the traditional program that contained systematic and codified training methods and methods in accordance with the principles of training science; The researcher believes that the process of adaptation in training and raising the level can only take place through continuous, continuous and codified training.

This proves the validity of the first hypothesisWhich states: There are statistically significant differences between the average of the pre-measurement and the average of the post-measurement for the control groupMotor compatibility measurements and measurementsThe skill level under investigation in favor of dimensional measurement.

Presenting and discussing the results of the hypothesisthe second: Which states: There are statistically significant differences between the average of the pre-measurement and the average of the post-measurement for the groupExperimentalinMotor compatibility measurements and measurementsThe skill level under investigation in favor of dimensional measurement.

Schedule (14)

The significance of the differences between the means of the pre- and post-measurements for the groupExperimental in"Motor compatibility measurements"Restrictionsearch" n=8

Measurements		Pre-measurement		Dimensional measurement		"F" value	"t" value
		s	±p	s	±p		
Motor coordination measurements	Jumping rope	3.50	0.93	32.50	5.98	29	13.56
	Throwing and receiving the ball	11.00	1.20	19.38	0.74	8.38	16.83
	Numbered circles	16.88	1.36	9.50	0.53	7.38	14.31

The tabulated “t” value is at a degree of freedom (7), and the level is 0.05 = 1.895

Shows a table**(14), and Figure (14)** The significance of the differences between the means of the pre- and post-measurements for the groupExperimentalIn resultsMeasurements of motor coordination (Jumping rope,Throwing and receiving the ball,Numbered circles); It is clear that the calculated (t) value is greater than the tabulated (t) value, which indicates the presence of statistically significant differences in favor of the post-measurement..

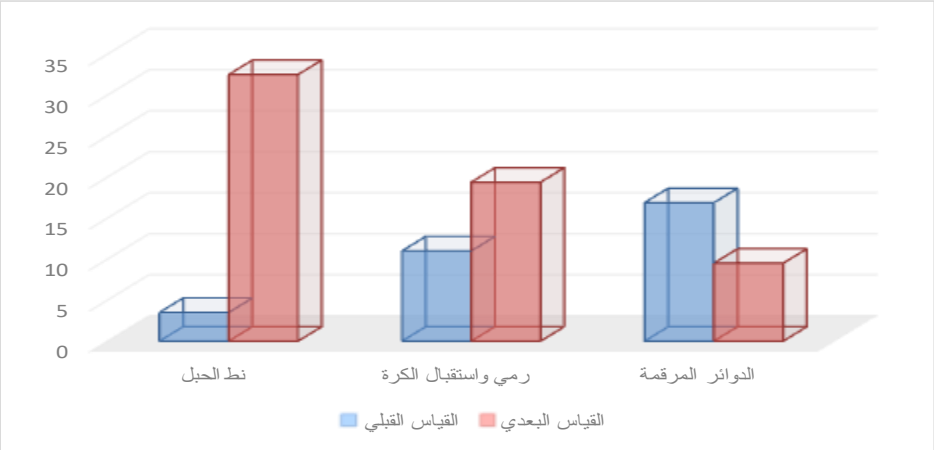


Figure (14) showsThe significance of the differences between the means of the pre- and post-measurements for the experimental group in motor coordination measurements "under investigation"

Schedule (15)

1- The significance of the differences between the means of the pre- and post-measurements for the groupExperimental inSkill measurementsRestrictionsearch" n=8

Measurements		Pre-measurement		Dimensional measurement		"F" value	"t" value
		s	±p	s	±p		
Skill measurements	Oshiro Okimi	2.50	0.53	9.75	0.46	7.25	29
	Meiji-Yoko-Okimi	2.63	0.52	9.13	0.83	6.50	18.72
	Hidari-Yoko-Okimi	2.38	0.52	8.50	0.76	6.13	18.91
	Miji - Mai Mwari - Okemi	1.00	0.00	8.88	0.64	7.88	34.76
	Hidari-Mai Mwari-Okeme	1.25	0.46	8.00	0.53	6.75	27

The tabulated "t" value is at a degree of freedom (7), and the level is 0.05 = 1.895

Shows a table**(15), and Figure (15)** The significance of the differences between the means of the pre- and post-measurements for the group ExperimentalIn result Skill measurements under investigation (Oshiro Okemi, Meiji-Yoko-Okemi, Hydari-Yoko-Okemi, Meiji-water Mwari-Okemi, Hydari-water Mwari-Okemi); It is clear that the calculated (t) value is greater than the tabulated (t) value, which indicates the presence of statistically significant differences in favor of the post-measurement..

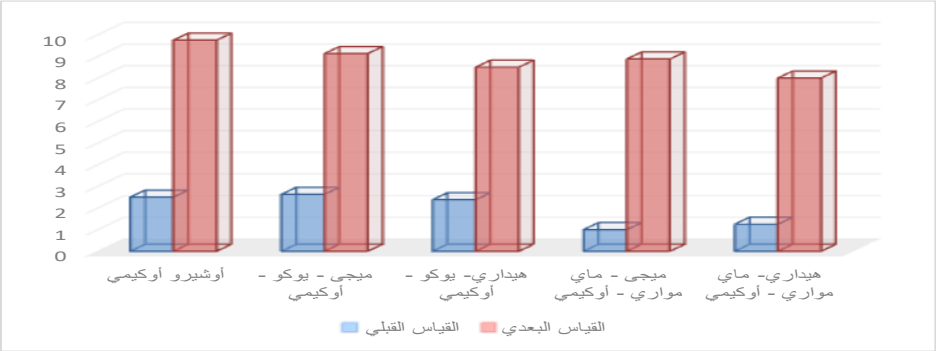


Figure (15) showsThe significance of the differences between the means of the pre- and post-measurements for the experimental group in the skill measurements "under investigation"

AndAli Salloum Jawad points out**(2004AD)**tothatThe importance of motor coordination emerges when an individual performs movements that require the use of more than one member of the body at the same time, especially if the organs work in more than one direction at the same time. Compatibility is the individual's ability to integrate types of movements into one template characterized by fluidity and good performance.. (9:52)

This is consistent with the study of:**Spectrum Ibrahim Abdullah (2018AD) (7), Amani Fathi Muhammad Mahrous (2016AD)(2), Muhammad Abdullah Mhibis (2015AD) (15).**

WeeAThe researcher explained that the reason for this is that the exercises that the research sample (the experimental group) practiced in...Judo training whereIt increased their ability to perform motor coordination;Motor coordination is one of the important principles in motor learning and skill performance and appears when the different body parts work in organized coordination and at the same time. This motor work comes through correct education and continuous training through the use of body parts to serve the performance of the required skill.

Also, motor compatibilityIn judoContributedinperformanceSkillsW ell, because compatibility requiresJudo player and budTo be characterized by overall body compatibility and compatibility betweenParts that contribute to the performance of skillsIn addition to compatibility with the eyes, legs and eyesand hands,Executing the skill correctly and with good coordination comes through correct learning and continuous good training through the use of body parts in a way that serves the required skill.

This proves the validity of the second hypothesis, which states: There are statistically significant differences between the average of the pre-measurement and the average of the post-measurement for the groupExperimentalinMotor compatibility measurements and measurementsThe skill level under investigation in favor of dimensional measurement.

Presenting and discussing the results of the hypothesisthe third:

Which states: There are statistically significant differences between the meanYMeasurementyen The dimensionalistsFor the totalfigFemale officerAnd experimentalinMotor compatibility measurements and measurementsThe skill level under investigation in favor of dimensional measurementFor the experimental group.

Schedule (16)

Meaning of differences Between the means of the two post-measurements for the control and experimental groups In measurements of motor compatibility"under consideration" N1 = N2 = 8

"t" value	"F" value	Experimental group		Control group		Measurements	
		±p	s	±p	s		
10.83	23.38	5.98	32.50	1.25	9.13	Jumping rope	Motor coordination measurements
9	3.38	0.74	19.38	0.76	16.00	Throwing and receiving the ball	
7.64	2.50	0.53	9.50	0.76	12.00	Numbered circles	

The tabulated “t” value has a degree of freedom (14), and a level of 0.05 = 2.154

Shows a table**(16), and Figure (16)** The significance of the differences between the means of the two measurementsThe dimensionalistsFor the totalfigFemale officerAnd experimentalIn resultsMeasurements of motor coordination (Jumping rope,Throwing and receiving the ball,Numbered circles); It is clear that the calculated (t) value is greater than the tabulated (t) value, which indicates the presence of statistically significant differences in favor of the post-measurement.For the experimental group.

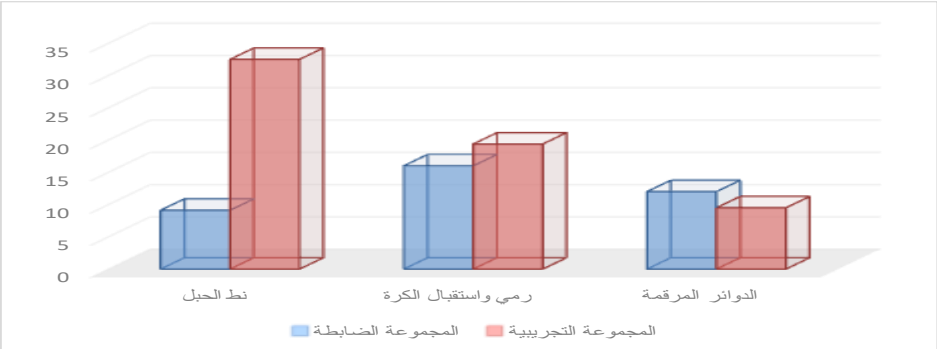


Figure (16) showsThe significance of the differences between the means of the two post-measurements for the control and experimental groups in measurements of motor coordination “under investigation”

Schedule (17)
Meaning of differences Between the means of the two post-measurements for the control and experimental groups inSkill measurements "under consideration"
N1 = N2 = 8

Measurements		Control group		Experimental group		"F" value	"t" value
		s	±p	s	±p		
Skill measurements	Oshiro Okimi	6.38	1.19	9.75	0.46	3.38	7.49
	Meiji-Yoko-Okimi	5.75	0.71	9.13	0.83	3.38	8.73
	Hidari-Yoko-Okimi	5.25	0.46	8.50	0.76	3.25	10.37
	Miji - Mai Mwari - Okemi	4.50	0.76	8.88	0.64	4.38	12.49
	Hidari-Mai Mwari-Okeme	4.00	0.76	8.00	0.53	4	12.22

The tabulated “t” value has a degree of freedom (14), and a level of 0.05 = 2.154

Shows a table**(17), and Figure (17)** The significance of the differences between the means of the two measurementsThe dimensionalistsFor the totalfigFemale officerAnd experimentalIn resultsSkill measurements under investigation(Oshiro Okemi, Meiji-Yoko-Okemi, Hydari-Yoko-Okemi, Meiji-water Mwari-Okemi, Hydari-water Mwari-Okemi); It is clear that the calculated (t) value is greater than the tabulated (t) value, which indicates the presence of statistically significant differences in favor of the post-measurement.For the experimental group.

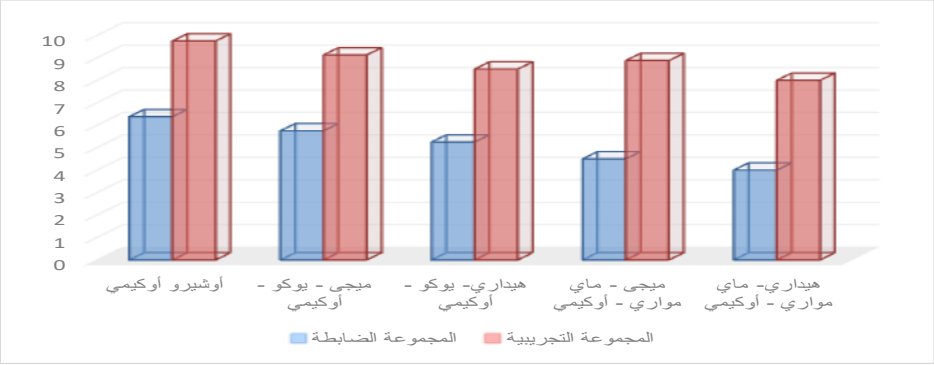


Figure (17) showsThe significance of the differences between the means of the two post-measurements for the control and experimental groups in the skill measurements “under investigation”

Muhammad Sobhi Hassanein points out **(1995 AD)** Compatibility depends on the safety and accuracy of muscle and nerve functions and their connection together in one action,There are many mistakes that

people makeSproutsAs for some movements that require the presence of an element of coordination, it is the participation of muscle groups that are not required in performing the movements, which causes a disturbance in the movement, resulting in a confused and inconsistent image.". (14:92)

This is consistent with the study of: **Spectrum Ibrahim Abdullah (2018AD) (7), Amani Fathi Muhammad Mahrous (2016AD) (2), Muhammad Abdullah Mhibis (2015AD) (15).**

The researcher attributes the superiority of the experimental group over the control group in the variables of motor compatibility and skill level toMotor coordination trainingthatContribute to enhancing balance, strength and movement controlAs it led to meImprove buds' understanding of the harmony of movements and how to apply them effectively insportsJudo, asThe frequent repetition of motor coordination exercises has contributedalsoIn enhancing performance over time, as repetition is an important factor in developing motor skillsAnd alsoReceiving guidance and careful correction of techniques has accelerated improvement and improved performance.

This proves the validity of the third hypothesis, which states: There are statistically significant differences between the meanYMeasurementyen The dimensionalistsFor the totalfig Female officerAnd experimentalin Motor compatibility measurements and measurementsThe skill level under investigation in favor of dimensional measurementFor the experimental group.

Conclusions and recommendations:

Conclusions:

Within the limits of the research objectives and the sample used, and based on the results of the statistical analysis, the researcher reached:

1- Existence Statistically significant differences between the average of the pre-measurement and the average of the post-measurement for the control group inMotor compatibility measurements and measurementsThe skill level under investigation in favor of dimensional measurement.

2- ExistenceStatistically significant differences between the average of the pre-measurement and the average of the post-measurement for the groupExperimentalinMotor compatibility measurements and measurementsThe skill level under investigation in favor of dimensional measurement.

3- Existence Statistically significant differences between the averageY Measurementyen The dimensionalists For the totalfig Female officer And experimentalin Motor compatibility measurements and measurements The skill level under investigation in favor of dimensional measurement For the experimental group.

Recommendations:

Within the limits of the research sample and the results reached, the researcher recommends the following:

1- Urging and guiding trainers to usethe Proposed programme To improve motor coordination and levelingSkill performance SproutsJudo.

2- It is necessary to conduct similar studies on different samples and in other sports.

3- It is necessary to hold seminars and workshops to educate trainers about the importance of motor coordination training.

4- It is necessary to conduct studies on the relationship between motor coordination and the level of performance of judo players and buddies.

the reviewer:

Arabic references:

1- Ahmed Abu Al-Fadl Hegazy: Judo Theoretical and Applied Foundations, Amer Printing, Mansoura, 2006 AD.

2- Amani Fathi Muhammad Mahrous: The effect of motor coordination exercises on improving the accuracy of passing and shooting in handball for first-level female students at the College of Physical Education, University of Bahrain, Assiut Journal of Physical Education Sciences and Arts, College of Physical Education, Assiut University, No. 43, Part 3, 2016 AD..

3- Ihab Kamel Afifi: Judo Foundations and Applications, Mukhtar Publishing Foundation, Cairo, 2006 AD

4- Hanafi Mahmoud Mukhtar: Scientific foundations in football training, Dar Al-Fikr Al-Arabi, 2016.

5- Khaled Farid Ezzat: A proposed effect of using the computer on learning some judo skills for students of the Faculty of Physical Education for Boys, unpublished master's thesis, Faculty of Physical Education, Tanta University, 2002 AD..

6- Tariq Muhammad Jaber: A training program for skill performance based on the effectiveness of some offensive tactical principles for young football players, Master's thesis, Faculty of Physical Education, Assiut University, 2002 AD..

7- Spectrum Ibrahim Abdullah: Motor coordination exercises and their effect on the level of performance of some basic skills of the game of handball, Thesis Journal, Sports Sciences, Thesis Publishing House, Volume 3, No. 8, Iraq, 2018 AD..

8- Zafer Namous Khalaf: The effect of some motor coordination exercises in developing the performance of female students' leg movements and lunges in fencing, Journal of the College of Basic Education, University of Babylon, Issue 9, 2012 AD..

9- Ali Salloum Jawad: Tests, measurement and statistics in the mathematical field, Spectrum Press, Al-Qadisiyah University, 2004 AD.

10- Firat Jabbar Saadallah: General Concepts in Motor Learning, Al-Mutanabbi Press, Diyala, 2007 AD.

11- Qasim Hassan Hassanein: Foundations of Sports Training, Dar Al-Fikr Al-Arabi, Cairo, 1998.

12- **Muhammad Hamed Shaddad:** Modern teaching methods in judo, 2010 AD.

13- **Muhammad Sobhi Hassanein:** Evaluation and measurement in physical education and sports, vol. 1, Dar Al-Fikr Al-Arabi, Cairo, 1987 AD..

14- **Muhammad Sobhi Hassanein:** Measurement and Evaluation in Physical Education and Sports, Part 1, 2nd Edition, Dar Al-Fikr Al-Arabi, Cairo, 1995 AD.

15- **Muhammad Abdullah Muhaibis:** The effect of motor coordination exercises according to the distributed exercise method in developing the skills of smashing and blocking for young people in volleyball, Journal of Physical Education Sciences, College of Physical Education, University of Babylon, Volume 8, No. 1, Iraq, 2015 AD..

16- **Nahida Abdel Zaid Al-Dulaimi:** Basics in Motor Learning, Dar Al-Diyaa for Printing and Publishing, Al-Najaf Al-Ashraf, Iraq, 2008 AD.

17- **Nabil Mahmoud Shaker:** Kinesiology and motor development - facts and concepts, University Institute for Printing, Baghdad, 2005 AD.

18- **Najah Mahdi Shalash, Mazen Abdel Hadi:** Principles of Motor Learning, Dar Al-Diyaa for Printing and Publishing, Al-Najaf Al-Ashraf, Iraq, 2010 AD.

19- **Nevin Hussein Mahmoud:**Judo Arts, National Books and Records House, 2014.

20- **Wajih Mahjoub:**Theories of learning and motor development, Wael Publishing House, Amman, 2001 AD.