

Effect of specific directional drills of Kata (Nage Nukata) on the performance level for blind Judo players

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Introduction and research problem:

It is worth noting that relying on scientific research is the basis for reaching the highest level of achievement in the sports field, as the levels that we see in the Olympic, Paralympic Games and international forums are the best evidence of this, and therefore it is necessary to use the scientific method and apply it to Egyptian sports for abled and disabled players so that we can reach international standards in various sports.

Kata is one of the important technical aspects of judo sport, which represents one of the main requirements for promotion to obtain a black belt (Dan-1) for normal and blind players in Judo sport, and it includes various styles of different Judo arts, which are limited to five combinations, ranging from standing throwing skills (Tachi waza), and sacrificial throwing skills (Sutemi waza). (4:65) (8: 4)

Also, "Usama Riyad" (2005 AD) indicated that practicing sport is considered a necessity for normal individuals in general and an urgent necessity for the blind in particular. Therefore, we must provide the blind with means of pleasure, recreation and the practice of activity that give many psychological and physical characteristics such as the ability to accept oneself, self-confidence and social acceptance (2: 37).

Judo sport is considered one of the sports that take the lead in setting up tournaments and high-level tests for the blind players, and the blind players in Judo sport are classified globally into three categories, namely (Blind A), a player who is completely blind, (Blind B), a player who has visual residues who sees only shadows, (Blind C) who is visually impaired player.

Farouk Al-Rousan (2005 AD) confirmed that the problem of moving from one place to another is considered

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one of the most important blind problems facing the visually impaired, therefore, his mastery of the art of movement is considered one of the basic skills in any training program for the blind, as the blind depends on the sense of touch as a basic dependence in knowing the directions. He may employ that sense of touch in directing himself, or he may employ that knowledge in directing himself towards the source of the sound (5: 161-162).

The performance of kata (Nage Nukata) requires a high dynamic interconnectedness

characterized by fluidity and accuracy of all kata skills, especially after the fundamental adjustments made by the International Federation and kodokan Institute of Japan in many of the technical skills of the kata, which in turn was reflected in the interest in developing the skillful performance of the kata, through exercises with special directions in proportion to the nature and form of performance in the kata, which leads to achieving the highest level of fluidity and ideal motor control for all kata skills. (11: 3) (14: 2) (15:27).

Figure (1) First Group, Throwing Skills by Hands (Oki Otoshi - Ippon Seo Nage - Kata guruma)



Figure (2) Second group: throwing skills by torso, Kushi Waza (Oki gochi - Hrai gochi - Tsuori Kumi gochi)



Figure (3), Third group: two-legged shooting skills, Ashi Waza (Okuri Ashi Barai - Sasai Tsuori Kumi Ashi - Uchi Mata)



Figure (4) Fourth Group: Forward sacrifice throwing skills, Mai Sotimi Waza (Tomai Nage - Ura Nage - Sumi gaichi)



Figure (5) Fifth Group: Lateral sacrifice shooting skills, Yoko Sotimi Waza (Yuki gake - Yoko gorma - uki Waza)



By looking at the scientific research related to Kata (Nage Nukata), the researcher has found a dearth of research conducted on blind players in judo, despite the importance of this category of

special needs in judo and its access to many tournaments at the local and international level, which lead the researcher to conduct such a study to shed light on this category in the

sports field in general and in Judo in particular.

This was as a motivation for the researcher to conduct many personal interviews with some coaches and ask them about the extent of the existence of special and codified exercises commensurate with the quality of the skills of the Kata (Nage Nukata), which was as an evident of the weak interest in this field, especially for Kata (Nage Nukata)), and to direct attention to the training programs implemented for match competitions (cheiai)

From this standpoint, this research was addressed in an attempt to reveal the importance of developing the physical and skill aspects of kata (Nage Nukata), by designing exercises with special directions of the kata Nage Nukata, and knowing its impact on the level of skill performance of the kata for blind players in judo.

Research Objective:

This research aims to identify " Effect of specific directional drills of Kata (Nage Nukata) on the performance level for blind judo players"

through:

- identifying effect of drills on the performance level of some special physical abilities of

Kata (Nage Nukata) for blind judo players.

-identifying effect of drills on the performance level of Kata (Nage Nukata) for blind judo players.

Research Hypotheses:

- There are statistically significant differences between the previous and post measurements of the experimental group in the physical variables under investigation in favor of the post measurement.

- There are statistically significant differences between the previous and post measurements of the experimental group in the level of skill performance of the Kata (Nage Nukata) under investigation in favor of the post measurement.

Methods and Procedures of the Research:

Research Methodology:

The experimental method was used due to its appropriateness to the objective and hypotheses of the research, using the one-group experimental design, due to the few number of the sample (blind players) by means of the two measurements (previous-post) of the experimental group.

Community and Sample of the Research:

The research community represents the blind judo sports players for the 2017-2018 season, and the research sample was deliberately chosen

from the players of the Rabat and Al-Anwar club, and their number was (6) players with a black belt degree (1).

Moderation of the research sample distribution:

Table (1)
Homogeneity of the research sample in all the variables under investigation n = 12

Variables	measurement unit	Average	Mediator	deviation	Torsion
Chronological age (age)	year	16.92	17.00	1.58	-0.13
Training age (years of practice)	year	2.75	3.00	0.38	-1.96
Length	Cm	167.90	165.50	3.46	2.08
Weight	Kg	71.85	69.50	6.85	1.03

It is evident from Table (1) that all the values of the torsion coefficients calculated for the variables under investigation ranged between -0.13: 2.08, and all of these values are confined between ± 3 , which indicate the homogeneity of the individuals of the research sample in those variables.

Tools and Means of Data Collection:

In gathering data and information related to the variables under investigation, the researcher relied on the following tools:

1- Reference survey: for the scientific literature and Arab

and foreign reference studies to determine the most important elements of the physical abilities associated with the kata (Nage Nukata) under investigation, the most important physical abilities under investigation have been identified, which are: motor compatibility - muscular capacity - agility - motor speed.

2- Opinion poll and personal interview forms.

The researcher has presented a "opinion poll" form in order to identify the most important physical abilities related to Kata (Nage Nukata) under investigation, attachment (2)

Measurements and Tests of the Variables under

Investigation:

Physical abilities tests:

The researcher has used a set of standardized tests with

scientific parameters (validity - reliability), to measure the physical abilities associated with the kata (Nage Nokata) under investigation, as shown in Table (2).

Table (2)

Tests to measure physical abilities associated with kata (Nage Nukata) are under investigation

No.	Physical abilities	Measurement unit	Test name
1	Motor coordination	Sec	Ouch Kumi (Left (Right) 30s (T
2	Power	Cm	Wide jump ((cm
3	Agility	No.	Burpee test 10 s (t)
4	Speed	No.	Ouch Kumi 10s

2- The skill level test of Kata (Nage Nukata) under investigation:

Attachment (5)

The researcher has resorted to three referees from the Egyptian Judo Federation, attachment(8), to measure the performance level of the Kata (Nage Nukata) through a performance evaluation form with scientific transactions approved by the International and Egyptian Judo Federations, in which the players in the local and international championships are evaluated attachment (5).

Polling studies:

This study was conducted from 2/7/2018: 3/7/2018 AD, with the aim of:

Ensure the validity of the tools, devices and the training hall in which the experiment will be applied.

Training of assistants on how to measure and record for tests to ensure correct data recording.

The results of this study resulted in making sure that all its objectives are achieved.

The proposed program:

The proposed program aims to know "the effect of exercises of special directions of (Nage nukata) kata on the level of blind judo players performance.

Principles Of Establishment Of The Program:

- Taking into account the safety and security factors during the implementation of the program and the nature and characteristics of the age under investigation.
- The gradual use of physical and skillful exercises during the training program from easy to more difficult.
- It has been agreed with the technical manager on the relative and time distribution of the program and the configurations of the components of the training load (intensity - size - comfort interval - intensity) during the period of implementation of the proposed program under investigation.

Components of the Training Load of the Training Program:

- The load formation (1: 1), (2: 1) was used during the load cycle for daily units, in proportion to the different stages of the program.
- Graduation in the training load from medium intensity to maximum intensity until the end of the training program, where the intensity of training units ranged from 60% to 95%

over the course of the training program.

Program Time Period:

The time period for the proposed program has been set at (12) weeks, at (3) training units per week, with a total of 36 training units throughout the duration of the program, and the time of the training unit is from 120: 100 minutes.

Procedures of the Implement of the Proposed Program Experiment under Consideration:

Previous measurements: Previous measurements were made for the members of the experimental group from 5/7/2018 to 8/7/2018.

The main experiment: The proposed program was applied to the members of the experimental group during the period from 10/7/2018 to 9/10/2018.

Post measurements: Post measurements were conducted for the members of the experimental group in the period from 11/10/2018: 14/10/2018.

Statistical Processors.

*SMA. * Mediator. * Standard deviation. * Coefficient of torsion.

* Percentage of improvement * Impact size * Wilcoxon test * ETA square (η^2).

Presentation And Discussion Of The Results

Presentation of the results of the first hypothesis, which states: "There are statistically significant differences between

the previous and post measurements of the experimental group in the physical variables under investigation in favor of the post measurement".

Table (3)

The significance of the differences between the previous and post measurements of the experimental group in the physical variables under investigation (N = 6)

Effect size		value(Z)	Positive ranks			Negative ranks			Unit	Tests
(η^2)	(r_{prb})		Total ranks	Average ranks	N	Total ranks	Average ranks	N		
0.911	1.00	2.23	21.00	3.50	6	0.00	0.00	0	No.	Motor coordination
0.853	1.00	2.09	21.00	3.50	6	0.00	0.00	0	Cm	Power
0.875	1.00	2.14	21.00	3.50	6	0.00	0.00	0	No.	Agility
0.908	1.00	2.22	21.00	3.50	6	0.00	0.00	0	No.	Speed

It is evident from Table (3) that all values of Wilcoxon test are statistically significant; It turns out that the effect of size value (r_{prb}) is equal

(1.00), and the effect size value (η^2) ranged between (0.853) and (0.911), which indicates that the size of the effect is (huge).

Table (4)

The rate of change of the experimental group's scores in the physical variables under investigation (N = 6)

Rate of change	Difference between averages	Post measurement	Previous measurement	unit	Tests
13.96	2.56	20.90	18.34	No.	Motor coordination
9.65	20.40	231.90	211.50	Cm	Power
15.53	3.40	25.30	21.90	No.	Agility
17.66	1.30	8.66	7.36	No.	Speed

It is clear from Table (4) that the rate of change ranged from (9.65) to (17.66)

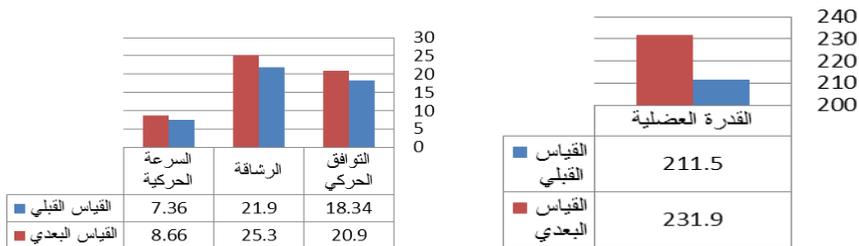


Figure (6) (7) the differences between the averages of previous measurement and post-measurement for the experimental group in the physical tests under investigation (measured by number), which are measured by (cm).

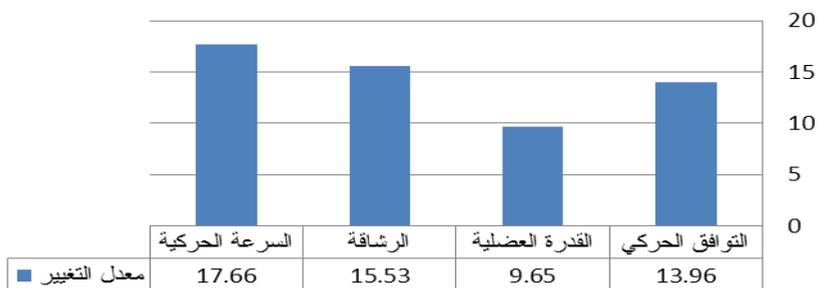


Figure (8) the rate of change of the experimental group's scores in the physical variables under investigation

Discussion And Interpretation Of The Results Of The First Hypothesis:

Table (3) (4) and Figure (6) (7) (8) show that there are statistically significant differences between the previous measurement and the post-measurement of the experimental group in the level of physical performance, as all the values of the Wilcoxon test are statistically significant. It turns out that the value of the effect size (rprb) is equal to (1.00), and the value of the effect size (η^2) ranged between

(0.853) and (0.911) and this indicates the size of the effect (huge). The rate of change ranged from (9.65) to (17.66).

The researcher has attributed the statistically significant differences and the rates of change of the experimental group players to the effect of the training program applied to them, which included exercises with directions of kata (Nage

Nukata), which contributed to raise the level of physical abilities associated with the kata under study, where these exercises helped during its dynamic structure similar to the actual performance of the kata within the proposed program on the clarity of the kinetic perception of blind players, the performance became more accurate through practice and frequent repetition of correct performance, and the proposed program took into account the individual differences between the players, which helped raise the physical competence of the players.

This is in agreement with Carl De Créé 2007 (10), Muhammad Shaddad (2009) (6), Ahmed Mahmoud Ibrahim (2011) (1) Nevin Hussein (2012) (7), and Noora Abu al-Maaty 2016 (9) where they indicated achieving a high level of physical abilities that helps judo players to balance their bodies during each stage of performance, as well as speed in restoring their balance after any changes in their status as a result of external or

internal (physiological) influences, conscious integration and focus in different situations and a sense of control during the performance and contribute to investing the interaction between his mind and his body during the exercise of sports activity to achieve the best performance.

From the above, we find that the first hypothesis of the research has been fulfilled, which states that "there are statistically significant differences between the previous measurement and post measurement of the experimental group in the physical variables under investigation in favor of the post measurement."

Presenting the results of the second hypothesis, which states:

"There are statistically significant differences between the previous measurement and post measurement of the experimental group in the skill level of (Nage Nukata) Kata in favor of the post measurement."

Table (5)
The significance of the differences between the previous measurement and post measurement of the experimental group in the level of skill performance of (Nage Nukata) kata in question (n = 6)

Effect size		value (Z)	Positive ranks			Negative ranks			unit	Tests
(η^2)	(r_{prb})		Total ranks	Average of ranks	n	Total ranks	Average of ranks	n		
0.858	1.00	2.10	21.00	3.50	6	0.00	0.00	0	degree	Test of the level of skill performance of the kata (Nage Nukata)

It is clear from Table (5) that all values of Wilcoxon test are statistically significant. It turns out that the value of the effect size (r_{prb}) is equal to

(1.00), and the value of the effect size (η^2) is equal to (0.858). This indicates the size of the effect (huge).

Table (6)
The rate of change of the experimental group's degrees on the level of skill performance (Nage Nukata)Kata in question (n = 6)

Rate of change	Difference between averages	Post measurement	Previous measurement	units	Tests
7.03	9.25	140.90	131.65	degree	Test of the level of skill performance of the (Nage Nukata) kata

It is clear from table (6) that the rate of change is equal to (7.03).

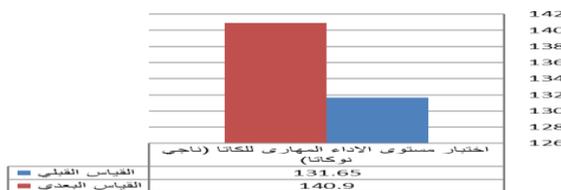


Figure (9)
The differences between the averages of previous measurement and post-measurement for the experimental group, the level of skill performance of (Alnajy Nukata) Kata under investigation
Discussion and interpretation of the results of the second hypothesis:

Table (5) (6) and Figure (9) show that there are statistically significant differences between the average of the previous measurement and post measurement of the experimental group in the level of skill performance of Nage Nokata Kata in favor of the post measurement. We find that the values of the Wilcoxon test are statistically significant and it turns out that the value of the effect size (rprb) is equal to (1.00), and the value of the effect size (η^2) is equal to (0.858). This indicates the size of the effect is (huge), also that the rate of change is equal to (7.03).

The researcher has attributed the statistically significant differences and the rates of change in the skill level of the kata (Nage Nukata) to the training program of the directions of kata, which helped the blind players to visualize the place and the dimensions of the directions of the kata, which led to an increase in the skill level of kata.

The researcher also has taken into account the individual differences between the players, as the training of the players on the kata was done individually in proportion

to the level and perception of each player separately, and this was reflected in the increased control of the players in directing their performance to the correct aspects of performance, such as speed, correct movement, timing of skill performance, increased smoothness and accuracy of performance. and the intervals between the skill stages were reduced, and the blind players were trained to maintain the distances in between during the attack, which led to the achievement of the greater goal and the goal of achieving the full degree of skill without errors.

This is consistent with what Jigoro Kano 2013 AD (12), ION-PETRE BARBOŞ 2014 AD (11) Richard Francis 2008 AD (13) and Tada 2007 (14) did indicate that the kata is considered continuous, competitive fighting without interruption with ideal kinematic performance, and therefore the judo player must have the physical abilities of the skillful performance of the kata, taking into account the factors of each of distance, time, direction, grip of the suit, and maintaining balance during the performance. Therefore, according to the analysis of the

kata's kinematic performance, we find that it has a special nature that must be developed according to scientific foundations so that we can reach the level of ideal motor and artistic performance.

From the above, we find that the second hypothesis of the research has been fulfilled which states that "there are statistically significant differences between the previous measurement and post measurement of the experimental group in the level of skill performance of (Nage Nukata) Kata in favor of the post measurement.

Conclusions:

- The proposed training program showed a positive effect in improving the level of physical performance of the variables of (coordination - power - agility - speed) among the experimental group players.
- The proposed training program showed a positive effect in improving the skill level of the (Nage Nokata) Kata under investigation among the players of experimental group.

Recommendations:

- Designing exercises with special directions that are suitable for the other different

types of kata in judo (Katame Nokata - Kimi Nokata).

- Designing exercises for the perceptual movement of kata performance for blind judo players.

-Conducting more studies similar to the nature of the current research on the level of skillful performance in actual competitive performance (cheiai).

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