

SOME MENTAL ABILITIES RELATED TO THE DISCUS ACHIEVEMENT

Sanaa Majid Mohammed

College of Physical Education and Sport Sciences / University of Baghdad

E-mail: Sanaa_altamimy@yahoo.com

Abstract

because the discus competition has plenty of interested people who were studying and developing its skills and its tactics, therefore the recent studies have turned to the subject of mental abilities to search for different ways and means to develop this competition, as the concept of mental abilities is one of the concepts that have emerged in the field of sport studies and in unlimited number of different sport games, the studies which were interested in the concept of mental abilities and its relationship with the skilled performance in many theories, opinions, ideas and thoughts that tried to study this concept in behavioral and Knowledgeably frame, on the sport field, which was till recently depend in its training programs on the physical, skill and tactical aspects only, ignoring unintentionally the mental abilities and its measuring methods and its ways to improving it and its relation with movement skills which leads in the end to the skilled performance of various sport competitions including discus.

According the researcher, there is no scientific study mentioned the mental abilities in discus for elite players and its relationship with the achievement of the discus, so the statement of the problem is to know if there is a relationship between some of the mental abilities with the achievement of discus for elite players. The goals of the research:

1. Identify the most important mental abilities of elite players in discus competition.
2. To identify the relationship between some of the mental abilities with the achievement of discus for elite players.

The researcher selected the research sample intentionally from elite players of discus for the sport season 2014 - 2015, (6) players were selected, and another (3) players were selected but not from sample of the research for the exploratory experiment.

The researcher is clarifying them as follows: (Bourdon- Anvimov) modified test for attention, Sense-Movement recognition test

Conclusion:

1. There is significant correlation relation between mental ability (attention intensity) with discus achievement for elite players.
2. There is significant correlation relation between mental ability (attention concentration) with discus achievement for elite players.
3. There is significant correlation relation between mental ability (Sense - movement recognition) represented by the sense recognition of the grip strength test with discus achievement for elite players.
4. There is correlation relation between mental ability (Sense - movement recognition) represented by the sense of time estimation test with discus achievement for elite players.

KEYWORDS: Mental. Related. Achievement.

1. INTRODUCTION & PROBLEM OF THE STUDY

The mental abilities is among the most essential components that contribute to access the upper levels for both male and female players and it's a fundamental part of the psychological preparation and training to achieve the desired goals, as recent studies have tended to correct and develop a lot of sports games, including the discus, through taking care of developing the mental abilities that the player needs, because it has a great importance in improving the performance.

The mental abilities is also one of the important essential components needed by the athletics coaches as it works on assisting developing the movement capabilities and developing the tactical skills and contribute in linking the movement sequence through developing the movement skills, mental visualization, attention concentration and the sense- movement recognition of the players, and it is known that the discus is one of the exciting game in both Olympic and international competitions, and improving the record level of discus player cannot be done without knowing the scientific foundations related to the type of training.

The importance of research is the attempt to identify the importance of studying the mental abilities and its effects on elite players of discus and it's a attempt to study its relationship with the achievement of discus because it's one the athletics activities that needs improvement, in addition to the contribution of the this study with previous studies in enriching the sport Library with what is useful to develop the competition and serve the players and coaches as well.

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2. METHODOLOGY

The researcher used the Descriptive method for its convenience with the goals of the study

Research sample: The researcher selected the research sample intentionally from elite players of discus for the sport season 2014 - 2015, (6) players were selected, and another (3) players were selected but not from sample of the research for the exploratory experiment.

Means of data collecting and tools: The researcher used the arabic and the foreign resources, the Internet, Tests and measurements, personal interviews, forms for mental abilities tests and Form of discus achievement.

Steps to accomplish the research: The researcher has read the arabic resources and the available studies, she settled down to work on identifying the most important mental abilities that are suitable for discus players, which are (Attention and Sense-movement recognition), and clarifying the research tests, the researcher is clarifying them as follows:

First / (Bourdon- Anvimov) modified test for attention / (Ahmed Mohamed Khater and Ali Fahmi:1978:492)

The researcher has used (Bourdon - Anvimov) modified test for attention, which is one of the most important tests for athletes used to measure five attention aspects (intensity, concentration, Stability, distraction, diversion). Only the values of concentration and intensity of attention aspects have been calculated due to the job of the researcher is limited to them, and the scale is a form contains (31) lines of arabic digits, each line contains (40) digits and thus the test has (1240) digits and the digits in each line are in groups placed in standardized way, each of which consists of (3-5) digits in a different arrangement to ensure that it would not be saved by the player.

1. Attention intensity test:

- Purpose: to measure the attention intensity of elite player.
- Tools: form of scale, stopwatch, and a pen.
- Procedure: When word (go) is being heard the player starts to take the test at the same time the stop watch starts ticking, the player searches and writes-off of number (97), line after line and from left to right
- Conditions: test time is one minute, and when the word (stop) is being heard the player puts a mark next to the reached digits.
- Calculating the results: extracting the following indicators: -

A: Overall size of the seen part of test (the amount of digits that have been seen) from the beginning till the STOP word.

S: The number of digits that should be written off in the seen part.

B: The number of errors in general (the number of digits that did not write-off plus the number of digits that mistakenly written off).

E: Work equation

$$E = \frac{(S - B) \times 100}{S}$$

Attention intensity: $A \times E$

2. Attention concentration test:

- Purpose: to measure the concentration of attention for elite player.
- Tools: light and audio distraction device, form of attention scale, stopwatch and a pen.
- Procedure: the same system that used in measuring the attention intensity, but when the start signal is given, the distraction device gives a flash of light each (5 seconds) and a sound each second (60 time per minute), The device is placed one meter away from the player with his eyes level
- Conditions: When the word (stop) is being heard the player butts a mark at the end of written off digits and the distraction device turns off automatically.
- Calculating the results:
- The results of measuring the attention intensity in quiet case = $U1$
- The results of measuring the attention intensity in distraction case = $U2$.
- Concentration = the difference between the quiet case and the distraction case.

Attention concentration is $B = U1 - U2$

Second / Sense-Movement recognition test:

1. The recognition test for the grip strength (Abu Ela Ahmed and Mohamed Hassanein:1997:175)

The purpose: Measuring the variations of the sense recognition according to muscle strength

Tools: dynamometer for grip strength and, a blindfold

Procedure:

1. Measuring the maximum grip strength with dynamometer, the player has three attempts, only the best attempt is counted (one minute break between each attempt and other).
2. Determine 50% of the maximum grip strength that achieved in the previous step.
3. Three attempts would be given without the blindfold and another three attempts with the blindfold alternately trying to achieve the (50%) of the maximum grip strength, that means the first attempt when the player can see and the second attempt when the player cant not see and so on until finishing the two sets.

Calculation:

- Calculating the attempts with the blindfold, whether its above 50% of the maximum grip strength (positive) or less than (50%) of the maximum grip strength (negative) or exactly (50%) of the maximum grip strength (zero).
- The amount of error is calculated for each attempt and then finding the arithmetic mean of the total errors in the three attempts.

2. Test of time estimation sense (Mohammed Ali Abu alkoshk & Mazen Raouf Hatamleh:1996:62)

The purpose: Measuring the sense of time estimation

Tools: electronic stopwatch

Procedure: First phase / the player should do the test without looking at the electronic stopwatch, the player should start and stop the watch at the times (5, 7 and 15 sec.) the player should repeat this procedure for the three times above Second phase / the player should do the test without looking at the electronic stopwatch while the player is standing up looking forward with the arm fully extended a length with the body side then the player starts and stops the stopwatch at the time (7 sec) and repeats this test three times in a row.

Calculation: Calculating the results of the three attempts at the time (7 sec), separately. Calculating the error in each attempt whether if it was more or

Less than the (7 sec) finally finding the arithmetic mean of the three attempts.

Pilot study: The pilot study is a practical training to stand on the negativities that the researchers may face during applying the study to avoid them(negativities) in the future, therefore, the researcher did this pilot study in 09/03/2014 on sample of (3) discus players.

Scientific bases of the tests: Although the tests of mental abilities (Bourdon -Anvimov test, and Sense - movement recognition tests) have high reliability and validity coefficient, the researcher has done the blow:

First / validity: the mental tests and measuring have been showed to a number of experts and specialists in, track and field, test and measurement and sport psychology, all of them agreed 100% on the validity of test and the measurement that been used in the research, in addition of calculating the Index validity to be sure of the tests validity, as shown in Table (1).

Second / reliability: The researcher did the pilot study in 09/03/2014 and found the reliability coefficient of the test after applying the tests on a sample not from the same sample of this study consist of (3) discus players in the sports season 2014 - 2015 and then re-apply the same tests on the same sample four days later, in 14/03/2014 , using the simple correlation coefficient of Pearson between the first and the second measurements, the result is that all the tests have high reliability because all the calculated values were greater than the tabular value which is (0.950) when the degree of freedom (2) and the level of significance (0.05) As shown in Table (1) also.

Third / Objectivity: The researcher has extracted the objectivity of the tests by calculating the value of simple correlation coefficient of Pearson between the scores of the first and second provisions, and found out that it has high objectivity because the calculated values were all greater than the tabular value (0.950) when the degree of freedom (2) and significance level (0.05) as shown in Table (1) also.

Table 1: Shows the validity, reliability and objectivity of mental abilities tests

	Tests	Reliability	Significance	Index validity	Objectivity	Significance
1	Attention intensity	0.875	Mora	0.935	0.944	Mora
2	Attention concentration	0.891	Mora	0.943	0.951	Mora
3	Grip strength	0.924	Mora	0.961	0.972	Mora
4	Sensing the time	0.843	Mora	0.918	0.942	Mora

Discus competition: The researcher did the discus competition test and measured the total distance for each player in order to get the best achievement.

Main experiment: After confirming the validity of all tests the researcher did the main experiment from (16/03/2014) until (10/4 / 2014), all tests were applied on the main sample of the work which was (6) discus players in the sports season 2014-2015.

Statistical laws: Using the (SPSS10) application for finding (mean, standard deviation, median, skewness coefficient, simple correlation coefficient of Pearson).

3. RESULTS AND DISCUSSION

Specifications of mental abilities tests and discus achievement:

The researcher has extracted the arithmetic means, standard deviations, the value of the median as well as the value of the skewness coefficient for all candidate tests of mental abilities and the achievement of discus as shown in Table (2) the researcher has reached that all values of skewness coefficient were smaller than (+3) This is a prove of good distribution The sample homogeneity.

Table 2: Arithmetic mean , standard deviations, and the value of the scenes coefficient of the mental abilities and a discus achievement

	Variables	Arithmetic mean	Mediator	Standard Deviation	Convolution coefficient
1	Attention intensity	118.833	120	9.600	-0.364
2	Attention concentration	0.187	0.187	0.006	0
3	Perception of the strength of the grip	1.394	1.192	0.319	1.899
4	The sense of estimating time	0.708	0.717	0.036	-0.75
5	Achievement discus	54.500	55.500	5.540	0.451

Presentation and discussion the correlation between the tests of mental abilities with discus achievement:

It was reached to a matrix of correlations coefficients for the tests of mental abilities and achievement of discus as shown in Table (3).

Note that the calculated values of correlation coefficients is greater than the value of the tabular correlation coefficient (0.811) when the degree of freedom is (4) and the level of significance is 0.05 which are (**intensity of attention, the concentration of attention, perception of the grip strength, and the sense of time estimation**) which shows a significance correlation relationship between some tests of mental abilities with discus achievement.

Table 3: Matrix of correlations coefficients for tests of mental abilities with discus achievement

Tests	discus achievement (Value of Calculated R)	Value Tabulated R	Significance
Attention intensity	0.861		Mora
Attention concentration	0.850		Mora

Perception of the grip strength	0.877	0.811	Mora
The sense of estimating time	0.834		Mora

The researcher believes that because there is significance correlation relation between the attention intensity and attention concentration with the achievement of the discus therefore the result matches the scientific resources, the player can not throw the disc to a far the distance without having high level of attention intensity in spite of the presence of distractions during his attempt to throw the disc.

The result that reached by the researcher agrees with (Abdul Sattar Jabbar 2000) in defining the concept of the intensity in the sports field " It represents a degree of toughness or difficulty that can be made by the player toward a distractions and thus whenever the attention intensity increased because of a distraction, the more mental and nervous energy are required in the process of attention " (Abdul Sattar Jabbar:2000:66)

It's also agrees with (Esmat Darwish and Nihad Munir 1996) that "the importance of the attention intensity is its impact on the player ability to accomplish the high achievement "(Esmat Darwish alkurdi and Nihad Munir Battikhi:1996:61)

And also agrees with (Tariq Hamoudi and Walid waadalah in 1995) that "concentration is the important mean to lift up the level of the athletes and them abilities to observe things accurately and clearly "(Tariq Hamoudi Amin and Walid Waadalah Ali :1995:259) . The researcher believes that there is a significance correlation relation for the sense-movement recognition with discus achievement, because the competition needs the mental ability (sense-movement recognition) during the throwing , as the recognition of the movement and feeling it lead the player to perform steps and rotation harmonically in order to Get the best distance, and this result matches with (Wasan Jassim 2002) that " the player systemic and muscular system, and the mental abilities has main role in understanding and getting the information and one of these metal abilities is the sense - movement recognition, which is responsible for moving acts, and its interpretation and its execution by knowing the environment to do the movement (Wasan Jassim Mohammed al-Qaisi-:2002: 2)

4. CONCLUSIONS

- 1- There is significant correlation relation between mental ability (attention intensity) with discus achievement for elite players.
- 2- There is significant correlation relation between mental ability (attention concentration) with discus achievement for elite players.
- 3- There is significant correlation relation between mental ability (Sense - movement recognition) represented by the sense recognition of the grip strength test with discus achievement for elite players.
- 4- There is correlation relation between mental ability (Sense - movement recognition) represented by the sense of time estimation test with discus achievement for elite players.

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