

The Effect of Gymnastics' Shows on the Locus of Control and Achievement Movement Level in Gymnastics

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Abstract: Gymnastic shows measure the nation's athletic development; therefore, developed countries pay special attention to them. Artistic gymnastics for men is also deemed as one of the gymnastics types which consists of six apparatuses as supervised by the International Gymnastics Federation. It is also considered one of the most important games in the Olympic Games. The locus of control is the feeling of the person that he can control the external effects that could affect him. The idea of the research came to the researchers when they were allowed the opportunity to design and perform a gymnastics show for the faculty on the occasion of opening the African Youth wrestling Championship, 2010. While teaching gymnastics curriculum the researchers noticed a variation in the student's performance. The research aims at defining the effect of gymnastic show on locus of control and movement achievement in gymnastics. The sample of the research included 60 students divided into two groups; one experimental group and the other control group, each consists of 30 students. The results showed that gymnastic shows have a positive effect in developing and improving the locus of control and movement achievement in gymnastics. It also proved statistically significant differences between the two groups of the research; the experimental and the control groups in favour of the experimental one in movement achievement in gymnastics. The researchers recommend adding gymnastic shows as a basic curriculum in the Faculties of Physical Education due to its psychological, physical and mental benefits, moreover recommends getting introduced to the most recent developments in the field of gymnastic shows by those who teach exercises in the Faculties of Physical Education.

Key word: Gymnastics show % Locus of control % Movement achievement

INTRODUCTION

Gymnastic shows are deemed as a front to measure the nation's athletic development. Therefore, developed countries pay special attention to them. The designers of such shows use different formations, accompanying music, costumes and colours as a method to express the idea of the show in an attractive way. Such operation can not be performed without an organized manner and cooperation between trainers, performers, designers of the show and the country's authorities [1-3].

Kracht and others define gymnastic shows as the "physical actions combined according to the physiological, dynamic and aesthetic laws and principals

that performed by a big number of people at the same time where performance are combined with expressing music or singing before audiences to indicate the level of participants and their development in the athletic field [2, 4, 5].

It also acquires the individual many values, characteristics, good manners and social spirits as a result of team training and cooperation between participants within the training. In addition, it affects the individual's personality and gives him self confidence as a superior person as well as acquiring physical characteristics due to his special performance especially if this performance was highly estimated by others which leads to developing the artistic level and reaching high levels of performance [4].

Artistic gymnastics for men is one of the gymnastic types consisting of six events as supervised by the International Gymnastics Federation and is considered one of the most important games in the Olympic Games that attracts the biggest number of spectators. It is also a special competitive athletic practice that differentiate from other sports which appears in the variety of apparatuses with different engineering design on which certain movements are performed through the regulatory aspects defined by the Gymnastics Code set for international and Olympic Competitions with concepts relates to (difficulty, connections, execution) and also B score execution represented in courage, innovation and ingenuity [6].

Mosa [7] defined the locus of control as the feeling of the person that can control the internal effects that could affect him and that the internal locus of control category covers persons who think that they are responsible for what ever happens to them and their internal capabilities control their success or failure. External control category is the persons who think that they are not responsible for what happens to them, as they refer that to an outside force which they can not control and such force is referred to luck, coincidence or others powers which control their destinies and therefore their success or failure.

Rateb [8] indicated that the surpassed sport individual has a higher degree of internal control compared to a less degree of external control as he interprets his accomplishments in the light of personal factors under his control and the level of his capabilities and excreted effort .Moreover, his responses to failure experiences are less negative as he has high amount of persistence and determination and also capable of developing his targets in a realistic manner consistent with his abilities and ambition's level compared to the athlete who has a higher degree of external control whose success experiences does not support his performance as he usually refers this success to external factors.

The idea of the research came to the researchers when they were allowed the opportunity to design and perform a gymnastic show for the faculty on the occasion of opening the African Youth wrestling Championship in ,2010 where the researcher noticed while teaching gymnastics curriculum a variation in the students performance which caused him to identify some elements that could affect the degree of movement achievement for this curriculum through training for the gymnastic show and assisting participants in acquiring great amount of

basic movements and element group skills used in gymnastics movements performance, along with increasing their ability to gain new expertise that were not previously provided, accordingly develop their locus of control and their understanding of new gained experiences which will be positively reflected on improving the level of movement achievement in gymnastics.

MATERIALS AND METHODS

The Purposes of the Research: The research aims at identifying the effect of gymnastic show on locus of control and movement achievement in gymnastics.

Hypothesis of the Research

- C There are statistically significant differences between the experimental and control groups in favour of the experimental group in locus of control.
- C There are statistically significant differences between the experimental and control groups in favour of the experimental group in the level of movement achievement in gymnastics.

Research Procedures: The researchers used the experimental method through using the experimental design of two groups; one experimental group and the other control group.

Community and Sample of the Research: The research community of 152 students were purposely chosen from the students of the third year (Department of Curriculum and Teaching Methods) from the Faculty of Physical Education for Men in Cairo of the academic year 2009-2010 and after excluding the failing students (26 students), absent students (23 students) and also excluding 23 students (members of athletic teams in both the faculty and sport clubs and 20 students whom participated in the pilot study, accordingly, the sample of the research became 60 students divided to two groups; one experimental and the other control as each consists of 30 students.

The researchers conducted consistency between the sample of the research regarding age, height, weight, locus of control, intelligence and movement achievement.

Table 1 indicates the consistency of the research sample in the previously mentioned variables.

Table 1: Arithmetic mean, standard deviation, medium and bending mean for the research sample in age, height, weight, locus of control, intelligence and movement achievement.

Variables	Measurement unit	Average	Standard deviation	Medium	Bending mean
Age	Year	20.97	3.35	21	-0.03
Height	cm	168.15	4.35	168	0.1
Weight	kg	70.45	5.25	69	0.83
Locus of Control	Degree	28.13	3.71	26.14	1.61
Intelligence	Degree	25.72	4.86	25	0.44
Movement Achievement	Degree	22.15	3.93	21.87	0.21

Table 2: Arithmetic mean, standard deviation and "T" value for the two groups of the research, the experimental and the control groups in age, height, weight, locus of control, intelligence and movement achievement.

Variables	Measurement Unit	Experimental group		Control group		Difference between two means		Indication level
		Arithmetic mean	Standard deviation	Arithmetic mean	standard deviation		"T" value	
Age	Year	21.1	3.87	20.38	4.15	0.72	0.69	Not significant
Height	cm	168.18	4.59	167.21	4.35	0.83	0.83	Not significant
Weight	kg	70.15	6.32	68.39	5.45	1.76	1.14	Not significant
Locus of Control	Degree	26.65	2.43	27.53	3.11	0.88	1.21	Not significant
Intelligence	Degree	25.13	4.01	26.31	3.55	1.18	1.19	Not significant
Movement Achievement	Degree	23.42	0.95	23.12	1.15	0.3	1.07	Not significant

Indexed "T" value at the level of 0.05 = 1.697

Table 1 illustrates that bending means ranged between 1.61 and -0.03 showing that all measurements were between (± 3), indicating the consistency of the research sample in these measurements.

Afterwards, the researchers conducted the equivalence of the two research groups; the experimental and the control groups in age, height, weight, locus of control, intelligence and movement achievement as indicated in Table 2.

Table 2 illustrates that there are no statistically significant differences between the two research groups; the experimental and the control groups, indicating the equivalence of the two groups in the variables of age, height, weight, locus of control, intelligence and movement achievement.

Tools of the Research

First: Apparatuses and Tools

- C A Restameter to measure height in centimetres.
- C Medical scale to measure weight in kilograms.
- C The faculty records to get the age and results of the firstyear for practical gymnastics curriculum for the members of the research sample of the year 2007-2008 to conduct consistency and equivalences.

Second: Used Tests

Locus of Control Test: The researcher used the athlete's locus of control test prepared by Afifi [9] that consists of 30 statements on which the response is

by "yes or no" and the high score of total responses refers to the external control where the low degree refers to the internal control.

Intelligence Test: The researchers used the intelligence test prepared by El-Sayed [10] for the consistency and equivalence of the research sample as it suits for the research sample, where intelligence is a general mental ability and important term required by the student to be able to acquire the motor skills.

Third: Level of Movement Achievement in Gymnastics:

The level of movement achievement in gymnastics was evaluated by a teaching staff committee from the Department of Curriculum and Teaching Methods whom are responsible for issuing degrees. Three of the staff for each measurement evaluate the students' performance in the final test of practical gymnastics curriculum that consists of five measurements by measuring the level of floor movements in floor exercise, horizontal bar, parallel bars, vault table and assistance methods (education technology) used in teaching gymnastics curriculum. Three degrees were given for each measurement of the previous five measurements with the total of 15 degrees. The researchers excluded the fifth measurement's degree (education technology) from the final result as it does not measure the practice performance level of gymnastics curriculum, so the total degree for the movement achievement in gymnastics became 12 degrees.

The researchers reached the movement achievement degree by removing the highest and lowest degrees and took the middle degree for each apparatus.

Fourth: the Gymnastics Show: The researchers designed, performed and directed a gymnastics show for 30 students of Teaching Department in the Faculty of Physical Education for Men on the occasion of opening the African Youth wrestling Championship - under 17 years- on Thursday, 22nd April, 2010 held at the Cairo stadium dom. The training duration took 30 training units each of an hour.

The Pilot Study: The researchers conducted the pilot study on Saturday, 13th February, 2010 till Monday 15th February, 2010 on a sample of 20 students from the research community and outside the main sample to identify:

- C The adequacy of the statements of locus of control test and the required time for applying it.
- C The suitability of the used training exercises for the research sample.
- C Specifying the required time and repetitions of each exercise of the show.
- C The consistency of the formations and its distribution on the pitch.
- C Finding the scientific coefficients for the locus of control test.

The Scientific Coefficients for the Locus of Control Test

Validity: The researchers tested the validity of the locus of control test by offering it to 8 specialist referees in physical education and psychology to decide its competence and they agreed to it.

The researchers tested the constructed validity by the internal consistency through applying it on the pilot sample and calculating the coefficient correlation between the degree of each statement and the total degree of the test as illustrated in Table 3.

Table 3 illustrates that coefficient correlation between the degree of each statement and the total degree of the test is statistically significant which confirms the validity of the test for its purpose.

Reliability Coefficient: Reliability coefficient was calculated by the method of test and retest with an interval timing of 10 days on the students of the pilot sample .The first measurement was conducted on Saturday, 13th February, 2010 and the second on Monday, 22nd February, 2010 as illustrated in Table 4.

Table 4 illustrates that coefficient correlation in locus of control is 0.667 which is significant indicator at the level of 0.05. So, it proves the reliability of this test.

Pre-measurements: The pre-measurements were performed on Sunday, 28th February, 2010 for height, weight, intelligence and locus of control.

Table 3: Coefficient correlation in the locus of control test between the degree of each statement and the total degree of the test, N= 20

No. of Statement	Coefficient		No. of Statement	Coefficient		No. of Statement	Coefficient	
	Correlation	Significant		Correlation	Significant		Correlation	Significant
1	0.701	Significant	11	0.581	Significant	21	0.875	Significant
2	0.681	Significant	12	0.574	Significant	22	0.681	Significant
3	0.711	Significant	13	0.793	Significant	23	0.809	Significant
4	0.795	Significant	14	0.811	Significant	24	0.593	Significant
5	0.684	Significant	15	0.712	Significant	25	0.514	Significant
6	0.545	Significant	16	0.511	Significant	26	0.534	Significant
7	0.567	Significant	17	0.474	Significant	27	0.612	Significant
8	0.713	Significant	18	0.603	Significant	28	0.787	Significant
9	0.583	Significant	19	0.637	Significant	29	0.793	Significant
10	0.767	Significant	20	0.684	Significant	30	0.697	Significant

"R" value on the level of 0.05 = 0.444

Table 4: Coefficient correlation between the first and second measurements in the locus of control test, N = 20

Variables	First Measurement		Second Measurement		Correlation coefficient
	Arithmetic mean	Standard deviation	Arithmetic mean	Standard deviation	
Locus of Control	25.94	4.38	28.47	4.43	0.667

Coefficient Correlation value at the level of 0.05= 0.44

Table 5: Arithmetic mean, standard deviations and T value and significant between the two research groups; experimental and control groups, in the level of movement achievement and locus of control.

Variables	Experimental group		Control group		Difference between two means	T value	Significant level
	Arithmetic mean	Standard deviation	Arithmetic mean	Standard deviation			
Movement Achievement	11.07	0.91	8.1	1.31	2.97	10.11	Significant
Locus of Control	22.45	2.28	25.11	2.94	2.66	3.86	significant

Post-measurements: The post-measurements were conducted on Thursday, 29th May, 2010 for locus of control and level of movement achievement.

Statistical Methods: The researchers used the statistical methods of arithmetic mean, standard deviation, medium, bending mean and "T" test.

Table 5 illustrates the existence of statistically significant differences between the two research groups; the experimental and the control groups, in favour of the experimental group in each of movement achievement in gymnastics and locus of control.

The researchers refer the superiority of the experimental group on the control one in locus of control to the role of the gymnastic show, which included free and double exercises and exercises by using tools such as flags which led to different formations and movement from a formation to another in a flowing and aesthetic manner.

Such performance excited the spectators and reflected in improving the participants' locus of control by enjoying the gymnastic show and increasing their self-confidence along with increasing their ability to concentrate and control their passive emotions to exert the best effort in training and performance in order to achieve their purpose and reach the highest possible level. The persons who understand the positive and negative incidents in their lives as a result of their behaviour or personal characteristics have an internal locus of control [11, 12].

The researchers also refer the result of the control group to the fact that they did not participate in the gymnastic show which led to increasing their external control and inability to control their actions during the performance as they refer their results to external factors such as luck, coincidence or others. This was highlighted by Dubrin [13] who stated that persons who have external control believe that there is an external force control their results and destinies.

Askar [14] also indicates that the locus of control is the person's ability to understand the incidents facing him in his life and that decisions may be internal locus of

control or external locus of control .That agrees with the studies of Salah El-Din [15] and El-Shahat [16] that athletes who have internal locus of control have a higher level of performance than those with external locus of control. Through such result, the first hypothesis of the research is proved.

The researcher refer the superiority of the experimental group on the control one in movement achievement in the gymnastics curriculum to the gymnastic show exercises which include variable group of exercises with different preliminary postures which impart many physical characteristics to the experimental group such as strength, agility, flexibility, balancing and coordination. Participants also mentally benefit from gymnastic shows through memorizing movements and connecting them together which acquire them a high degree of organized thoughts, presence of mind and acuteness along with the coordination of costumes and colours which lead to increasing aesthetic taste and feeling of happiness.

The researchers also refer these differences to the reaction between music and movements of the show, as the variation of rhythm and tempo of the music leads to improving the feeling of the movement tempo by clarifying movements in a clear manner in the mind of the participant which accordingly appears in good streamlined performance with less effort. Such result agrees with many studies [17-20], thus the second hypothesis of the research is proved.

CONCLUSION

According to the results of the statistical analysis and according to the research purposes and the limits of the sample, the following conclusion was reached:

- C Gymnastic shows have a positive effect on developing and improving the locus of control.
- C Gymnastic shows have a positive effect on developing and improving the movement achievement in artistic gymnastics.

Recommendation

- C The importance of adding gymnastic shows as a basic curriculum in the Faculties of Physical Education due to its psychological, physical and mental benefits.
- C The importance of developing psychological aspects for students, especially in locus of control through gymnastic shows.
- C Identifying the most recent developments in the field of gymnastic shows by those who teach exercises in Faculties of Physical Education.

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