

## **The effectiveness of a training program using gaming gymnastics on the level of some of the physical abilities and skills of the gymnasts**

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### **Introduction and search problem:**

The civilization and progress of peoples are measured by the extent to which society uses the human wealth inherent in its members and directs their energy in a way that contributes to the progress of humanity and honest mirror to the level of its civilization and its renaissance.

**Adele Shenouda, Samia Farghaly** (1999) and **Mohamed Ibrahim** (1997) point out that gymnastics is one of the sports activities that are important in the Olympic, global and local field Due to the multiplicity and variation of the devices used, which gives it an aesthetic characteristic that attracts both the athlete and the viewer and even the number of prizes and medals allocated to compete for them is much more than it is monitored for some other sports activities. (1: 61) (11: 291) **Adel Abdul Basir** (1990) points out that gymnastics movements on the devices consist of the following elements (anchoring, attachment, sitting, standing, jumping, climbing, swinging, balancing ). The performance requirements in artistic gymnastics vary from device to device depending on the nature of the performance on each device. ( 9: 9)

Childhood is considered one of the crucial stages in the life of the child, in which the first seeds are placed for various aspects of his physical, mental, physical, psychological and social personality, **Said Abdel Maksoud** (1985), citing Harre, points out that this stage is necessary to acquire the skill that achieves the child's requirements, and that attention to it ensures the child's real education and development in mental, congenital, psychological and physical aspects.

Referring to the stages of growth and its characteristics and the needs of the young at each age stage, we find that the age stage of 4-6 years is the first stage in selection and training in gymnastics therefore, it should be taken care of when thinking about any work so that the beginning is from the right beginnings and the child is characterized at this stage by motor development. Giving the child the initial physical skills of controlling body balance and transitions from walking and crawling is an important basis for gaining basic physical abilities well. (2 : 42)

Hence the importance of this research in the design of a program that works

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to attract children in an interesting and fun way that provokes their motivation to learn and so that the child is more positive and this is what contemporary education advocates.

The researchers believe that through gymnastics games can be presented gymnastics as a sport in the form of competitions aimed at qualifying children to play on devices and develop the child from one stage to another through the gradual use of tools and devices, one of the advantages of gaming gymnastics is to prepare the child physically and psychologically and to gain the spirit of cooperation with the group and compete to achieve progress and give the spirit of courage and instill the spirit of honest competition.

Through the expertise of the two field researchers and his specialization in gymnastics and his field visits to government and private clubs in Hail city, Saudi Arabia, there has never been a single club interested in training at this stage and there has been no gymnastics activity in any club, Although scientists have confirmed that this stage is important in building human beings in an integrated structure and through this the child grows from all aspects of physical, health, physical, mental, psychological and social as the researchers noted the frequency of these children on clubs with their parents and there was no activity to contain these children and hence the idea of research and its problem came to establish a project for gymnastics schools to train these children and design a training program Using gymnastics games and

recognizing its impact on the development of physical abilities and some basic skills of young women in gymnastics.

Hence the idea of this research, if the gymnastics of the games is so effective and fruitful why not use it with children? It may be more effective especially if he's the kind of person who likes the child and attracts his attention.

#### **Research objectives:**

The research aims to design a training program using gymnastics games for young women in gymnastics to identify:

- 1- The impact of the training program using gaming gymnastics on the level of physical abilities in question.
- 2- The impact of a gymnastics training program on the kinetic learning level of young women in gymnastics.

#### **Research hypotheses:**

- 1- There are statistically significant differences between the pre-measurement and the post-measurement in the level of physical abilities and kinetic learning for young women in gymnastics and in favor of post-measurement.
- 2- There are statistically significant differences between the research measurements (pre- - tracker - post) in the level of the variables in question and in favor of the post measurement.

#### **Similar studies and research:**

##### **First: Arab Studies:**

- 1- A study of **Eman Al-Saeed's** (2010) (4), which aims to identify a proposed recreational games program to develop the physical characteristics of juniors in gymnastics and its relationship to the level of kinetic performance. The

researcher used the experimental method and the sample size reached (75) children. The proposal has a positive effect on some special physical traits from (3-6) years.

**2- A study of Ikram Al-Sayed and Hoda Abdel-Hamid (2011) (3)**, which aims at identifying “the effect of a kinetic education program using the activities of multiple intelligences on kinetic intelligence, autonomous behavior and physical fitness for pre-school children (5-6) years. The two researchers used the experimental approach and reached the size of The sample is (50) children. The results indicated that the physical education program using the activities of multiple intelligences has an effective effect on the motor intelligence, autonomous behavior and physical fitness of pre-school children.

**Second: Foreign Studies:**

1- A study of Peter and others 1998 (19), which aims at identifying the role of physical activity and health fitness in developing a set of physical characteristics (strength - flexibility - compatibility). The study was conducted on a sample of (365 children and girls) and the results showed that there is a moral influence of healthy exercise and fitness in developing the physical characteristics in question.

2- A study of Efthimios, Nikolas 2008 (17) conducted a study aimed at testing the effect of a kinetic education program on promoting recreation for four areas of children's development, which are the (motor, cognitive, emotional, and social). The two researchers used the experimental approach and the research sample

included (124 A child from the age of (4-5) years from kindergarten stage, and the most important results indicated that the program has the ability to positively influence all areas of development (motor, cognitive, emotional and social) for pre-school children.

**Search procedures:**

**First: the research sample:**

An intentional sample of (16) female athletes was selected from among the junior players in the Gymnastics School in Al-Zuhoor Club, whose ages ranged from 4 to 6 years. Poll studies were conducted on a sample of (8) players from outside the research sample.

**1- The reasons for sample selection:**

- The two researchers trained members of this sample in Al-Zuhoor Club, which facilitated the implementation of the proposed program.
- All members of the sample are in the same growth stage in which mental and kinetic maturity is converging.
- The age stage (4-6) years are the first stages of selection and training in gymnastics.
- The availability of material and human potentials in the club.

**2- Homogeneity of the research sample**

In order to ensure that the research sample members fall under the equilibrium curve, the two researchers conducted homogeneity among the members of the research sample in some of the following variables: (age - height - weight), as shown in Table (1).

**Table NO (1)**  
**Homogeneity of the research sample in some growth variables R = 16**

AR	variables	measuring unit	$\bar{A}$	A.M 2	S +	V
1	age	Month	65.97	66.00	2.61	- 0.034
2	height	Cm	110.41	109.50	4.11	0.664
3	weight	Km	21.66	20.00	2.99	1.666

A = mean

A.M 2 = Median

It is clear from Table No. (1) that the coefficients of torsion in the variables (age - height - weight) ranged between (- 0.034, 1.666), i.e. it was limited between (+ 3), indicating the homogeneity of the research sample members in the selected variables.

**Second: The tools and devices used in the research:**

The researchers used the following methods and tools to collect data related to the research: The Rostameter device for measuring height (in centimeters), a medical scale for measuring weight (in kilograms), a stopwatch to count the time, equipment and tools for gymnastics games represented in (Swedish seats - a divided box or the parts placed on the ground in length or width - medical balls - ground parallel - graduated Pull-up In height - movable and fixed jump ladders - vertical, inclined and horizontal climbing ladders - jump ropes and climbing ropes - high jump device - mattresses - sticks - pony - moving hoop - wall pull-ups .... etc.).

**Third: Exploratory Studies:**

**The first exploratory study:**

The aim of this study was to experiment with the tests that were nominated by experts after conducting personal interviews, during the period

S+ = Standard deviation

V = skewness

from Wednesday 18/12/2019 to Monday 23/12/2019 to learn about:

- How appropriate these tests are for a search sample.
- How well the assistants understand how the tests are conducted.
- How valid are the tools used in the tests.
- How valid is the place for testing.
- Possible errors during tests to avoid in basic study.

**A- Stability of the tests:**

The researchers calculated the stability factor using the method of applying the test and then reapplying it (Test-Retest) with a time interval of three days between the two applications. A sample of assigned (8) Young women was taken to conduct reconnaissance studies and the first measurement was conducted on them on the first day, Wednesday 12/ 25/ 2019. Then the second measurement on the same reconnaissance sample was conducted on Monday 12/ 28/ 2019 Under the same circumstances and using the same tools and assistants.

The correlation coefficient between the first and second applications was calculated using the Pearson correlation coefficient, and table 2 shows the stability coefficients of the test in question.

**Table No (2)**  
**Stability factor for the physical abilities and basic skills of the young women in question r = 8**

Research variables	Test title	measu-unit	1 <sup>st</sup> App		2 <sup>nd</sup> App		Correla-tion Coeffici-ent
			A	A.M 2	S +	V	
physical abilities	Wide jump from Steadiness position	Cm	100.63	8.63	101.88	8.43	0.865*
	Seal	Second	32.38	2.72	32.25	2.19	0.822*
	20 M sprint	Second	6.13	0.61	6.11	0.60	0.933*
	Zigzag running	Second	9.17	0.59	9.09	0.52	0.918*
	standing o one foot	Second	13.75	1.67	14.38	0.92	0.724*
	Skipping rope	frequency	1.75	0.71	1.88	0.64	0.867*
basic skills	Attached bending arms (Steadiness)	Second	9.13	0.99	9.75	1.17	0.897*
	Standing on the Hands Steadiness)	Second	15.88	1.25	16.25	1.67	0.841*
	Caliper slot	Cm	26.88	2.47	25.63	1.92	0.889*
	dome	Cm	47.75	3.24	47.00	3.16	0.892*

Correlation Coefficient Tabular Value on (0.05) = 0.622

Table 2 shows that all correlation coefficients are morally significant at 0.05 for the tests in question, with the results of the table indicating that these values ranged from 0.724 to 0.933, representing high values, reflecting the stability of these highly selected tests.

#### B. Validation of tests:

The two researchers applied the tests to a sample of 16 young women, (The Experimental group) Tuesday,

7/1/2020. The validity of the tests was calculated using differentiation validity by finding the significance of the differences between the and lower quartiles using the T test, after the two researchers had arranged the research sample (16 young women) in descending order, and then found the significance of the differences. Table (3) shows the Validation coefficients of the tests in question.

**Table (3)**  
**Validity factor of the tests in question R = 16**

Research variables	Test title	measu-unit	upper quartiles		Lower quartiles		T Value
			A	A.M <sub>+</sub>	A	A.M <sub>+</sub>	
physical abilities	Wide jump from Steadiness position	Cm	112.50	2.74	94.17	3.76	8.81*
	Seal	Second	29.17	0.41	34.33	1.51	7.37*
	20 M sprint	Second	5.59	0.12	6.65	0.11	14.56*
	Zigzag running	Second	8.66	0.18	9.71	0.11	11.13*

**Follow Table (3)**  
**Validity factor of the tests in question R = 16**

Research variables	Test title	measu-unit	upper quartiles		Lower quartiles		T Value
			A-	A.M+	A-	A.M+	
	standing o one foot	Second	14.33	0.52	12.17	0.41	7.29*
	Skipping rope	frequency	2.67	0.52	1.50	0.55	3.46*
basic skills	Attached bending arms (Steadiness)	Second	11.67	0.52	8.50	0.55	9.36*
	Standing on the Hands (Steadiness)	Second	19.00	0.63	14.83	0.41	12.41*
	Caliper slot	Cm	24.33	0.82	29.83	0.75	11.07*
	dome	Cm	44.50	0.55	50.33	1.37	8.83*

**T tabular Value on (0.05) = 1.812**

It is clear from table 3 that there are significant statistical differences at the level (0.05) between the group (upper quartiles - Lower quartiles) and in favor of the upper quartiles group in all the tests in question, which indicates the validity of the tests used to measure the research variables.

**2. The second exploratory study:**

The two researchers conducted the second exploratory study during the period from Wednesday, 1/1/2020 to Saturday, 1/4/ 2020 on the sample and the number (8) players, by applying some units of the training program with the aim of identifying:

- The suitability of the proposed program using gymnastics gaming for the research sample.
- Ensuring the validity of the tools and devices which are used and how assistants use them.
- Identifying the difficulties faced by the researchers when implementing the basic experiment.

**Fourth: Proposed training program**  
**The basics of preparing the training program:**

The two researchers identified the basics of his proposed training program using gymnastics gaming by

identifying the best basics and principles for planning and preparing programs that could be drawn from the opinions of some experts, studies and previous research according to the following:

- \* Determination of the duration and time of implementing the proposed training program.
- \* The suitability of gymnastics games stations proposed for the members of the research sample.
- \* Determining the intensity and size of the gymnastics games stations used and inter-resting periods in accordance with the contents and objective of the proposed training program, as the method of repetitive training was used in the rationing of the load of the program contents.
- \* All the gymnastics games stations used- the program content- must be in the form of competitions and sequences characterized by excitement and suspense to help stimulate young players to learn and learn.
- \* Taking into consideration the Characteristics of the stage by presenting various movements because

this stage is characterized by permanent activity and a constant desire for change and the inability to practice a specific activity for a long time.

\* Taking into account the manifestations of fatigue, because at this age the child is rapidly tired, so it is up to you to allocate short periods from time to time.

### **The objective of the proposed training program**

The program aims at developing physical abilities and improve the performance of some basic skills that are the basis of the selection of young female gymnasts using gaming gymnastics .

### **Content of the proposed training program**

To achieve the goal of the proposed training program, it's taken into consideration that the program includes the following:

A- Various warm-up exercises with the aim of activating and preparing the body and these exercises included: walking, running, jumping, with flexible exercises for all parts of the body.

B- The main part exercises which include stages using gymnastics games ,herewith (3), and this is done using free exercises, small tools, auxiliary devices where performance is carried out by natural skills such as walking, running, partridge, jumping, slipping and crawling with the performance of some gymnastics skills suitable for this age such as some rolling and simple jumps.

C- Various calming exercises in order to try to return the young trainees to their normal state.

\* The games gymnastics stations - the program content - have been displayed to the experts to determine how suitable they are for the members of the research sample.

### **Basis for regulating the proposed training programme:**

The regulated training programs in the field of gymnastics contain a lot of different and varied perspectives, which requires identifying the best steps for planning and preparing the proposed training program using gymnastics games, which could be derived from the survey of scientific references specialized in the field of sports training and gymnastics, these steps are:

#### **A- Determining the stage and duration of the implementation of the proposed training program:**

The two researchers specified the duration of the preparation phase in gymnastics and the research sample by (12) weeks to start the proposed training program using gymnastics , during the period from Wednesday, 8/1/ 2020 to Saturday, 12/4/2020.

#### **B- Determine the total time for the proposed training program:**

The two researchers determined the number of training hours during the training program as (36) training hours (2160) minutes, and they were distributed to the weeks of the preparation phase according to the specific goal of the phase, and according to the degrees of training loads.

### C- Determining the total time of training on gymnastics games

The two researchers specified a time of (45) minutes of each training unit daily time dedicated to the main part of the training on the games gymnastics stations containing the proposed training program by (3) daily training units in the weekly training unit during the preparation phase, thus bringing the number of training hours on the games gymnastics stations during the proposed training program the number of (27) training hours (1620) minutes, distributed equally to the number of (9) gymnastics stations games facility (5)

during the preparation phase and weekly training units.

#### Fifth: Statistical treatments:

To achieve the objectives of the research, the following statistical methods were used: Arithmetic average - standard deviation - twisting coefficient - test. T-test (semantics difference) - correlation coefficient - contrast analysis).

#### Presentation and discussion of results:

#### Presentation and discussion of the results of the first hypothesis

#### Presentation of the results of the first hypothesis:

Table (4)

Indication of the differences between the mean scales (pre-post) of the experimental group At the level of tests under consideration

Research variables	Test title	measu-unit	Pre measurement		Post measurement		T Value
			A-	A.M±	A-	A.M±	
physical abilities	Wide jump from Steadiness position	Cm	104.58	7.82	147.92	8.91	12.13*
	Seal	Second	31.75	2.18	19.83	2.17	12.85*
	20 M sprint	Second	6.16	0.43	5.34	0.41	4.58*
	Zigzag running	Second	9.14	0.40	7.04	0.33	13.43*
	standing o one foot	Second	13.25	0.87	20.75	1.66	13.27*
	Skipping rope	frequency	2.00	0.60	4.00	0.43	8.99*
basic skills	Attached bending arms (Steadiness)	Second	10.08	1.16	17.17	0.94	15.75*
	Standing on the Hands (Steadiness)	Second	16.92	1.38	25.42	1.68	12.97*
	Caliper slot	Cm	13.08	0.90	16.17	1.03	7.49*
	dome	Cm	47.17	2.21	34.08	1.38	16.66*

T tabular Value on (0.05) = 1.796



It is clear from table 4 that there are statistically significant differences at the level (0.05) between the mean measurement (Pre - Post) of the experimental group in the level of variables under consideration and in favor of the post measurement.

**Discussing the results of the first hypothesis: -**

The results of the research showed the objective of the study, which refers to the attempt to identify the impact of the proposed training program using gymnastics games on the development and improvement of the level of physical abilities and some basic skills in gymnastics for the experimental group and the results of which are shown in table (4) for comparing the pre measurements with the post measurements of the experimental group in the level of physical abilities and some basic skills in gymnastics and this confirms the existence of statistically significant differences at the level (0.05) between the two average scales (pre - post).

The two **researchers** attribute this difference to the positive impact of the proposed training program using gaming gymnastics, which used free exercises, small tools and devices such as (pull up, hoops, Swedish seats, divided boxes, climbing ropes, jump ramps, pony, trampolines .... Etc.) with the use of natural skills during performance on the devices and tools of walking, running, jingle, jumping, slipping and crawling with the performance of some gymnastics skills suitable for the age stage, which led to the turnout of young people to practise and thus this worked on improving and

developing physical abilities and basic skills. This result was agreed with the results of the study of Nebras Murad (2004) (14) and **Mohammed Rizk** (2009) (12) **Akram Aseed, Wahadi Abdul Hamid** (2011) (3) that the development of a codified training program leads to the development and improvement of the level of physical abilities and the occurrence of Differences between pre and post measurement of the experimental group and in favor of post measurement and this is consistent with what **Nabila Khalifa** (1980) (15) and **Saad Jalal** and **Mohammed Allawi** (1982) (7) pointed out that children love competition and conflict and want to measure their abilities as the child tends to measure his abilities with others. Besides, his ability to learn is very great so it is preferable to train them using gymnastics games.

Play is considered a suitable way to release the energies of children, play in childhood instinct works on the formation of the child's personality, and play is an essential entrance to the child's mental and cognitive development, as this age stage is considered the stage of continuous motor activity. (16: 22 )

Thus, the first hypothesis is fulfilled, which states that "there are statistically significant differences between the two (pre-post) measurements of the experimental group and in favor of post measurement."

**Second: Presenting and discussing the results of the second hypothesis: Presentation of the results of the second hypothesis:-**

**Table (5)**  
**Analysis of the variation between the three research measurements of the**  
**Experimental group in Physical Capabilities**

Test	Average total squares	Degrees of freedom	Total squares	Average total squares	Value "F"
Wide jump from Steadiness position	Inter-measurements	2	11301.39	5650.694	96.24*
	Inside measurements	33	1937.50	58.71212	
	Total	35	13238.89		
Seal 20 M sprint	Inter-measurements	2	862.1667	431.0833	99.60*
	Inside measurements	33	142.8333	4.328283	
	Total	35	1005.00		
Seal 20 M sprint	Inter-measurements	2	21.88141	10.9407	83.67*
	Inside measurements	33	4.315092	0.13076	
	Total	35	26.1965		
Seal	Inter-measurements	2	26.47507	13.23754	89.54*
	Inside measurements	33	4.878958	0.147847	
	Total	35	31.35403		
standing on one foot	Inter-measurements	2	341.0556	170.5278	119.31*
	Inside measurements	33	47.16667	1.429293	
	Total	35	388.2222		
Skipping rope	Inter-measurements	2	24.05556	12.02778	44.51*
	Inside measurements	33	8.91666	0.270202	
	Total	35	32.97222		

It is clear from table 5 that there are statistical differences of moral significance at the level of (0.05) between the three research measurements.

**Table (6)**  
**Analysis of the contrast between the three search measurements of the group At the performance level of basic skills**

Test	source of variance	Degrees of freedom	Total squares	Average total squares	Value "F"
attaching of bending armies (Steadiness)	Inter-measurements	2	301.7222	150.8611	170.20*
	Inside measurements	33	29.25	0.886364	
	Total	35	330.9722		
standing on hands (steadiness)	Inter-measurements	2	433.5556	216.7778	117.76*
	Inside measurements	33	60.75	1.840909	
	Total	35	494.3056		
Caliper slot	Inter-measurements	2	895.0556	447.5278	143.97*
	Inside measurements	33	102.5833	3.108586	
	Total	35	997.6389		
Dome	Inter-measurements	2	1046.056	523.0278	183.13*
	Inside measurements	33	94.25	2.856061	
	Total	35	1140.306		

Table No. (6) shows that there are significant statistical differences at the level of (0.05) between the measurements of page No. (6).

#### **Discussing the results of the second imposition:**

The results showed statistically significant differences between the measurements of the experimental group (Pre- tracking - post) in the level of variables in question and in favor of higher measurement and this is evident in the tables No. (5-6) for the analysis of contrast for measurements of research (pre - tracking - post) between the measurements of the search for statistically significant differences in all variables. The two researchers attribute this apparent superiority between the mathematical averages of the experimental group's research measurements in all variables to the proposed training program

which was applied to the experimental group. It had a positive effect on the members of the experimental group. This was confirmed by the studies of **Ghada Jalal Abdul Hakim, Sahar Yissin (2004), Ayman Rifaat al-Saeed (2010) (4) and Radwan Shawkat Jaber (2010) (6)** Which indicated that Codified training programs lead to the improvement and development of physical abilities and the performance of basic skills. This is due to the use of sequences and competitions using games gymnastics and attention to flexibility during the training program using twisting, developing and stretching movements that has gained the child flexibility. This improvement is due to the impact

of the proposed training program using gaming gymnastics and this is consistent with the study of **Rabab Farouk (1985) (5)** which indicated that it is possible to change the specifications of devices and tools in terms of height so that the presented physical shapes can be diversified or by using a device or several devices or by performing one or more movements until the exercise appears more muscular and neurological compatibility.

#### **Conclusion:**

In the light of the research objectives, and within the limits of the research sample and from the data and information reached by the two **researchers** and in the light of statistical treatment, the following was drawn:

1. The proposed program using gaming gymnastics has a positive and effective impact on the development of the physical abilities and basic skills of young women in gymnastics.
2. The results of the research measurements indicate that there are differences between the arithmetic averages of the research measurements (pre- tracking - post) and in favor of the dimensional measurement.

#### **Recommendations:**

- 1- Directing the results of this study and the program used and the steps of its implementation to the trainers in the field of training young people in gymnastics to benefit from these results.
- 2- The need to work on developing the physical abilities and basic skills for the young gymnastics as the right basis for the selection of young people by

developing programs commensurate with this stage.

3- The need to use gaming gymnastics in physical and preparatory preparation.

4- The need to conduct similar studies using other tools and devices because of the positive impact of these tools and devices in the development of the skill and physical level.

5- Applying the proposed program using gaming gymnastics to young women in gymnastics.

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