

The Impact of Training Program Associated with Musical Rhythm to Teach Female Student's Gymnastics Selected Skills

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Abstract

The objectives of the study were to identify the effect of the training program accompanied with musical rhythm on the skill level of female students in the gymnastics course at Yarmouk University. As well as to Identify the mean differences in the post measurement among the level of skill performance in the gymnastics course according to groups "experimental and control". The quasi experimental design was used as a research method, the sample of the study was (40) students chosen on purposive way from female students in the school of physical education at Yarmouk University who were enrolled in gymnastics (2) course. Ss were distributed randomly into two equal groups (n=20). The program was designed and applied by utilizing musical rhythm during instructional sessions. The results of the study show that the value of (t) test of the experimental group for the skill level in pre and post measurements was at statistically significant value at ($\alpha \leq 0.05$) for the benefit of the post measurement. Also, the values of (t) for skill performance in gymnastics indicate statistically significant differences between the means of the skill performance of the sample due to the variable of the group and for the benefit of the experimental group. The researchers recommend using musical rhythm in teaching -learning sessions in order to improve the performance in other practical courses, especially with the courses that require high consistent performance.

Key words: Musical Rhythm, Gymnastics Skills.

Introduction

Gymnastics is considered one of the greatest sports events, it depends on many physical and compatible abilities accompanied by skillful abilities, aesthetic taste and a sense of performance during the implementation of movement routine is of a notable concern. It focuses on the availability of physical and compatible abilities as an important and effective factor in the success of performance. Its importance appeared in reducing the time required to learn basic skills, minimizing the efforts, rapid and meaningful use of physical skills in changing conditions and situations. In addition to follow-up the refinement of technical skills and its development, and in the process of diagnosis in the selection process of talented athletes.

As well, the most important procedures and mechanisms to ensure that the player reaches a state of achievement, which represent his/her ability to perform creative work in sports. He /she is trying to develop performance to reach a state of physical and functional adequacy by focusing on physical conditioning associated with the skills to be developed. The means and methods to convey instructions to students in an interesting way is considered of valuable concern. That helps them to absorb, learn and train in the shortest possible time. An acquisition of gymnastics skills in school settings is considered one of the most important objectives of the educational and training process. as it contributes significantly and effectively in raising the level of skillful performance of the athletes of different sports, one of these methods is the use of musical rhythm in speeding up and organizing the educational and training process.

Rhythm plays an important role in motivating and developing the movement to achieve good performance, the rhythmic exercises require a responsive, continuous and disciplined response from the learner of the musical rhythm, and an interaction with the musical sentences and tracks so that the learner can meet the requirements required and imposed on him. Thautetal (2005) has conducted several research pertaining music and rhythm and how the brain responds to the musical rhythm in different settings.

(www.researchgate.net, Rhythm-music- and the Brain, 2005)

Motor rhythm refers to the persistent utilization of regular rhythmic force behind repeated musical presentation, which may be created within the context of a steady

Beats, as a rhythmic pattern it helps in repeating the action over and over again.(Musicforviollin.blogspot.com,2012)

Al-Jumaili (2013) defines the motor rhythm as: the motor ability in which the individual athlete can perform movements and athletic skills with the kinetic weight and timing and regular constriction and expansion of the muscle groups according to modified mechanisms in appropriate and specific time periods, Al-Fadhli (2009) noted that the motor rhythm embodies a special entity and is compatible between the parts of the skill, frequency of its steps and the selected motor rhythm.

The motor rhythm has two main aspects: (The first aspect: represents the time period of each section of motion. The second aspect: reflects how different the concentration of muscle activity in each section is).Therefore, the motor rhythm aims to train the body to accompany the heard music to activate the movement, which means, finding a harmony between hearing and muscles of the body. Various motor skills in activities and sports require musical rhythm (Baiwi, 2014).

The musical rhythm helps to develop the rhythm of the movements, as Zahran (1997) points out that the musical rhythm is to divide the time unit of one or more sounds in equal or different proportions in length and shortness, with regular orders. As the musical rhythm is based on strong and weak units. If we can imagine music without rhythm, it would be just sequential sounds that make no sense. Therefore, the musical rhythm helps to develop the motor performance.

Hantoush et. al (1985) have pointed out that the association of music with movement allows the teacher to dispense with instruction and counting, this means minimizing the efforts. It also gives the teacher an opportunity to observe all students, correct mistakes and give instructions. So, it seems to have a strong relationship between movement and music when talking about brain activities. The music gives a regular vibration in specific duration of time in a way that appeals to feelings, and entertaining by listening. This is how we see the workers singing their songs during their hard work, which makes their jobs easier, and make the job simple and close to their souls. Despite the numerous studies that aimed the compatibility abilities of gymnasts; there is a shortage found by the researchers, specifically in the studies that link the use of musical rhythm in developing and improving abilities among gymnastics students. That's why this study aims to identify the effect of the use of musical rhythm on improving the level of skill performance in the gymnastics course among the students of the faculty of physical education at Yarmouk University.

Research background:

Rhythm: Rhythm is defined as a sequence of strikes and clicks with differences in terms of strength and weakness. (Khattab, 1992) clarifies that rhythm is an organization of motion and a division of times in different melodies on a regular basis. While (Zahran, 1997) mentions that rhythm is the consistency of the linear proportions between distance and distance. The word Rhythm from a Greek origin (Rhyno) means the river with waves and continuous currents.

Any movement we perform during our day-to-day work or life is closely related to rhythm. It is present in all living things. It is also one of the essentials that man notices in himself and in nature. Examples include heart beats and breathing (Khattab, 1992).

Motor Rhythm: The term rhythm of motion is used in all sports activities. We often hear about the rhythm of bouncing, jerking or jogging as well as its use in repetitive movements such as swimming, exercise, gymnastics and various sports, as the characteristic of rhythm is one of the most important characteristics of motion in sports, each sport has its own movement rhythm, which the trainer or the teacher seeks to develop in the player or learner for the purpose of developing the level of skill performance. When the learner or player has enough ability to control the muscles of his/her body, and when the relations between tension and relaxation are in harmony with the surroundings; it gives the appearance of the movement a wonderful harmony and a distinctive form of performance. Trainers and educators in the field of physical education have used the "musical tone" term and developed this concept to fit the nature of motor performance (Baiwi, 2014).

The importance of motor rhythm is to follow the method of economic work of the nervous and muscular system in all sports movements, since the application of the principle of rhythmic change of tension and relaxation has a positive effect on raising the level of performance and developing methods of education and training (Abbas, 1990). As the continuous exchange between exercise and rest in muscle work leads to a loss of energy and then a compensation, without this exchange, the body will quickly strain and become unable to move, all organs of the body including muscle fibers and cells work rhythmically, and this does not prevent the individual to strain,

but the rhythm has proved to be an organizing factor of the lack of saved energy. The rhythmic exchange between constriction and expansion helps blood flow and increases the functional ability of the muscular system. The muscular system strains as a result of the effort on the nervous system. As it works rhythmically, and this rhythmic work depends on the strong vibrations causing stimulation and obstruction (Zahran, 1997).

Musical rhythm: Rhythm is the base of various arts including music, and without rhythm there is no music. Music in general is composed of melodies and tones that express the characteristics of music which in its turn stimulates the characteristics of accompanying movements, because music with its rhythmic melodies gives an indication of the speed, the same happens with the accompanying movements in experience of activity, which raises the positive feeling and enthusiasm and helps in the process of learning motions. (Al-Abd, 1986).

The strength and weakness of music must correspond with the strength and breadth of the movement, and the diversity of music regarding its strength and weakness helps to undermine the muscular nervous effort of the whole body or some of its parts. That's the reason why attention should be paid to the power of music so that the player can give the strength to the accompanying movement. The musical rhythm is richer than the motor rhythm because it can be recorded in a musical note that includes the details of the plot. While the motor rhythm is the result of the body's response to the musical rhythm (Zahran, 1997).

(Hasan, 2011), quoting from (Savageries, 2002), asserts that music can have a major impact on improving athletic performance through repetition of exercises, as music can increase the accuracy of the learner's attention. It grabs his attention away from the exhaustion resulting from repetition and practice. Music will then influence creating a positive mood and avoiding the thoughts of exhaustion. Music in one hand is considered a stimulating factor for the learners to compete, and a soothing factor of the athlete's anxiety on the other hand. Music is therefore used as a relaxation technique that leads to the development of learning, the correlation of human movements and music with increasing periods of exercise constantly increases the levels of results of work. This is because musical rhythm is compatible with physical skill models. Therefore, music can enhance the acquisition of motor skills and create a better learning environment.

The importance of musical accompaniment to physical activity can be summarized as stated by Hantoushet. al (1985):

1. It has an emotional effect on souls as it acts as a motivation towards the repetition of movement to perform the exercises cheerfully.
2. It helps to quickly acquire the sense of movement, and thus it works on the development of the motor rhythm that leads to the mastery of performance. This perfection brings a sense of beauty, order, sequence, ease and accuracy to those who look at this movement.
3. It helps the trainer to observe mistakes during the performance rather than being preoccupied with the induction and counting on the exercises. Thus, it contributes to reduce the burden among the coaches.
4. It is considered a helpful method to learn the new exercises perfectly.

It also contributes to the development of motor expression, the development of aesthetic sense, the development of musical knowledge and information, and the enhancement of musical sense too.

The study problem:

Through the field experience of researchers in teaching practical courses and follow-up of many of the methodological plans in the Jordanian universities, especially the gymnastics course as it is an obsession for decision-makers in educational institutions, there has been a marked weakness in the adaptation of female students to the gymnastics course, specifically in the aspects related to motor awareness, and knowledge of the skills' details from the technical point of view. Considering that the mastery state of motor tasks is the basis on which all movements are based upon whether regular, routine or physical. It makes the individuals able to adapt to the actions and transactions of movement under conditions and positions known or unknown, expected or unexpected, giving the individual the opportunity to partially or completely adjust to the technical performance of the skill and then find the appropriate alternatives as in an individual or collective game.

As a result of this remarkable weakness, which accompanied their level of skill performance, beside the use of traditional methods in teaching and training different skills among some teachers, and because the strategy of employing musical rhythm has proved its effectiveness in the process of teaching some other PE courses.

As a music is a way of controlling good performance for the learner, enhances ability of motor expression and help him/her to control performance. In addition to find a state of harmony between its parts, especially if the musical track

is consistent with required movements to perform. Because of the previous reasons, the researchers decided to tackle this endeavor to verify whether utilizing musical rhythm benefits the performance and develop female students in gymnastics course or not?

Importance of the study

The importance of the study highlights the use of musical rhythm and utilizing it while teaching sports skills in order to benefit the students and reach a better level in the gymnastics course, because gymnastics course is considered relative difficult, besides there is a need to reach a good level in all physical and technical capabilities. It is of importance to take advantage of the benefits of music in improving the flow of movement, as the flow means the absence of sudden stops or the end of the movement at a time that needs to be continued. Generally speaking the students have some fears in the continuation of performance related to gymnastics skills, which leads to loss of the flow of performance. Note that the desired outcome lies on having a coherent and consistent exercise routine that highlights consistency, synergy and motor beauty, and

The fact that the new plans for the bachelor's degree students in the faculty of physical education at Yarmouk University emphasizes the linking of gymnastics with rhythm and movement expression of students, which increases the importance of this study.

In addition to the mentioned above, there are several bodies that can benefit from the results of this study, in different educational institutions, whether university students in colleges, institutes and departments of physical education or schools for beginners' individuals practicing the sport of gymnastics. The researchers considered dealing with this issue within the question that constitutes the research problem: How effective the musical rhythm could be in developing the level of skillful performance for the gymnastics' students?

Objectives of the study

This study aimed at the following:

- 1- Identifying the effect of the training program accompanied with musical rhythm on the skill level of female students in the gymnastics course.
- 2- Identifying the mean differences in the post-tests on the level of skill performance in the gymnastics course according to groups "experimental and control" groups

Study hypotheses

There was a statistically effect at the level of significance ($.05 \geq \alpha$) by using the training program associated with musical rhythm to raise the skill level of female students in the gymnastics course.

2. There were statistically significant differences at the level of significance ($.05 \geq \alpha$) of the post-tests related to the level of performance in the gymnastics course among the average performance of students attributed to the groups "control and experimental" for the benefit of the experimental group.

The previous related literature

Ikhweileh (2015) has conducted a study about the effect of the use of different velocity rhythms on some kinetic variables in the competition of 100 m and the achievements of the players of the athletics team at Yarmouk University. And to identify the most preferred rhythm in the improvement of kinetic variables; 3 different rhythms were used, the first rhythm was very fast, the second one was average and the third had the lower speed. Note that the three rhythms were at high speeds. Where the research sample consisted of (6) players (3) males and (3) female athletes from the athletics team at Yarmouk University for short distances. A semi-experimental approach was used as it suits the nature of this research. Kenova's kinetic analysis was used to figure out the values of kinetic variables. The results of this study showed that the change was clear on the following variables: The time either in total or for every 10 m, the step frequency, as well as a slight improvement in overall speed and the speed every 10 m, while there has been no change in the number of steps and the step length. The results showed better improvement and utilization of the rhythmic program in females rather than males.

AL Rashid (2015) conducted a study that aimed to study the effect of accompanying music with gymnastics and the performance of motor skills among university students in the Faculty of Physical Education at the University of Basra. The researcher used the experimental design.

The sample of the study consisted of 20 students from the faculty of physical education divided equally into two groups: (10) experimental group with music and (10) control group without music. All participants completed (6)

weeks of their training program. The results by using t-test showed that a significant difference in the performance of all skills between the control and experimental groups and for the benefit of the experimental group.

Anshel & Marisi (2013) examined the effect of synchronous motion of music on the endurance of physical tasks. The study sample consisted of 32 students (ages 19 to 22 years) who were tested on the index of physical work capacity (170 beats per minute), which was considered and used as a criterion for the intensity of the exercise. The sample was then distributed after the parity process into (3) groups: synchronous motion of music group, synchronous motion of music group under a control status and non-music motion group. The results of repeated analysis of variance (ANONA) showed that music, especially when accompanying with physical movements, had a positive effect on endurance and that male students were better in tolerance than female students.

- Swedan (2012) conducted a study to determine the impact of the use of music on the development of some skills and physical capabilities of basketball players. The sample was chosen in a deliberate manner and consisted of (20) players representing the basket team at the Faculty of Physical Education at Yarmouk University, they were distributed randomly into two groups (experimental and control). The technical and physical program was applied with music for a period of (8) weeks, and the results showed that there is a clear impact of the use of music in developing some of the skills and physical capabilities of the players. Where there were significance differences between the pre and post measurements for the benefit of the post-measurement.

- The study of Mesko, et al. (2009). aimed to determine the effect of artistic music on the reaction time of visual stimuli, the researchers had a fact that emphasizes that music stimulation is a technique that shortens the response time of participants to visual stimuli. The sample of the study consisted of two groups (experimental and control). The sample consisted of (10) students for each group aged between (19 and 22) years. A special device was used to measure the angle of the individual's elbow, and an electric device to measure angles. The results showed that listening to music resulted in shortening and reducing the response time or reaction of the experimental group of visual stimuli.

- Polltou et al. (2003) conducted a study that aimed to compare two types of sound incentives in a routine dance performance. The aim of this study was to identify whether rhythmic beatings or musical tunes are more influential in motivating the rhythmic display of dance steps. The study sample consisted of two groups (15) female students of experimental group who performed their movements with playing the tambourine, and a control group which consisted of (15) female students who performed movements with regular music, the results of this study confirmed that the group that was performing accompanying the tambourine beats (rhythm) made a much better presentation than the group that performed the dance with regular music.

- In the study of (Abu Al-Ghayz, 2002), which aimed to identify - the impact of the use of quiet and loud music on the level of performance of ground gymnastics skills (Rolling front - rolling back - stand on hands - side somersault on hands) of blind students- differences between the three search groups (the first with a loud music - the second with a quiet music –and the control) in the level of performance of ground gymnastics skills (rolling front - rolling back - stand on hands - side somersault on hands). The results were statistically significant for the benefit of the group with quiet music.

Paulette's (2000) conducted a study about the importance of rhythm in the training of ballet movements, there were five arbitrators from the leadership of the Canadian School of Ballet who were arbitrators and observers for the performance of the study sample, representing a group of elite students in the Academy. The results showed that the rhythm had the greatest effect in correcting the wrong performance and learning the correct Ballet movements, the results also indicated that the realization of the correct rhythm and motor rhythm skills in addition to the control of performance through the rhythm can facilitate training in ballet movements.

Methodology and procedures:

The experimental approach was used in its semi-experimental design with both (experimental and control) groups due to its suitability and the nature of the study.

The study population: The study population consisted of female students of the faculty of physical education at Yarmouk University who enrolled in the second semester of the academic year 2015/2016 within the age group of (19-22) years with a total number of (350) students.

Study Sample: The sample of the study was chosen in a deliberate manner by the students of the faculty of physical education who enrolled in Gymnastics Course (2)

The total number of the sample was (40) students, divided into two equal groups, experimental and control, where they selected randomly (20) students per group. (10) students were selected to conduct the exploratory study from outside the study sample but from the same study population. Table (1) showed the arithmetic means, standard deviations, kurtosis and skewness values of the sample of the study.

Table (1): The arithmetic means, standard deviations, kurtosis and skewness values of the sample of the study

Variable	Measuring unit	Lowest value	Highest value	Arithmetic mean	Standard deviation	skewness	kurtosis
Height	Cm	148	179	161.20	6.71	-	0.20
Weight	Kg	43	74	59.35	8.44	-	-
Age	Year	19	22	20.60	0.84	0.14	1.12
						0.35	-
							0.69

Table (1) shows the following:

1. The height of the study sample members ranged between (148-179) cm. The arithmetic mean of the height variable was (161.20 ± 6.71) and the skewness and kurtosis values were $(-0.12, -0.20)$ respectively. These values are acceptable since they indicate the homogeneity of the sample members.
2. The weight of the study sample members ranged between (43.00 - 74.00) kg. The arithmetic mean of the weight variable was (59.35 ± 8.44) . The skewness and kurtosis values were $(-0.14, -1.12)$ respectively. These values are acceptable since they indicate the homogeneity of the sample members.
3. The age of the study sample members ranged between (19.00 - 22.00) years. The arithmetic mean of the age variable was (20.60 ± 0.84) . The values of skewness and kurtosis were $(0.35, -0.69)$ respectively, which are acceptable values to indicate the homogeneity of the sample.

Tools used in the study:

The following tools were used: ball, jumping rope, meter, medical balance, whistle, recorder with loudspeakers, pianos and drums for direct playing and what else corresponds to the range and path of skill performance of the skills to be studied. In addition to direct music playing, playing piano and drums. Besides, recorded music, whether oriental tracks or rhythms used and spread among people.

Steps and procedures of the study:

- In order to determine the sample of the study population, the process of counting the total number of female students were controlled from the faculty of physical education who enrolled in gymnastics course (2). The total number was (60) students in the second semester 2015/2016.
- The sample was selected in a deliberate manner, which included (40) female students who were randomly distributed into two groups (experimental and control) groups, each group included (20) students.
- Check out the gymnasium in order to ensure its adequacy and the possibility of applying the program in it.
- Check the availability of the tools in order to apply the study.
- Number of female students who chose gymnastics in their study plan, who completed the course of gymnastics learning, gymnastics theories and gymnastics specialization were chosen in order to assist in conducting pre and post measurements.
- A group of specialists in the gymnastics game was chosen to evaluate the skill performance in the floor exercise routine, through direct observation of the students' performance, and the final grades were established.

Pilot Study:

A pilot study was conducted on a sample of (10) female students from outside the sample of the study during the period between 20/9/2015 to 20/10/2015. The pilot study aimed to:

1. Ensure that the assistant team understands the nature of the tests and how they should be performed.
2. The difficulties facing the test and the possibility of avoiding them.
3. The suitability of the tests used for the research sample.

4. The appropriateness of equipment and tools for testing.
5. Verify the duration necessary to perform tests.

Validity of the tests: The researchers investigated the validity of the test by presenting the tests to group of experts from the Ph.D. holders in the field of physical education, in addition to number of trainers known for their outstanding experience at the level of colleges of physical education in Jordanian universities in order to determine the content validity of the selected tests and their suitability for collecting the data and information to be measured, where the experts' observations were taken into consideration and some proposed amendments were made.

Reliability of the test: In order to verify the reliability of the tests, the researchers used the method of "Test-Re-Test". The tests were applied to the exploratory sample which consisted of (10) students and then re-applied after one week of the first application on the same sample. Then the correlation coefficient between the two applications was figured out, the correlation coefficient was (0.83).

The significance of Pearson product moment correlation coefficient between the two applications was found to be statistically significant. This indicates the stability of the test (the level of skill performance) and the validity of the application, since the values of the correlation coefficient were greater than 0.80. These values could be approved for the purposes of this study.

Pre-Testing Procedures: The pre-tests were conducted for the study sample at the gymnasium - Yarmouk University between 24-28 / 1/2016, where the sample equivalence was checked in the results of the pre-tests:

Group equivalence: To figure out the equivalence between the study groups (experimental and control), a t-test was applied to the relevant variables of the study sample according to the group variable, and to the performance of the members of the study sample in the test of the skill performance level in the pre-measurement according to the group variable. The tables (2-3) illustrate this.

Table (2) Results of t-test on personal variables according to the group variable

variable	Measuring unit	Group	Arithmetic mean	standard deviation	t	Freedom degrees	Statistical significance
Height	Cm	experimental	162.10	7.17	0.85	38	0.40
		Control	160.30	6.27			
Weight	Kg	experimental	58.55	7.75	0.60	38	0.56
		Control	60.15	9.21			
Age	year	experimental	20.45	0.76	1.13	38	0.27
		Control	20.75	0.91			

Table (2) shows that the t-test values of the variables of height, weight and age according to the group variable are not statistically significant at the level of ($\alpha \leq 0.05$),

where all the values of the significance level were greater than (0,05), and this indicates the equivalence of variables related to the two groups of study.

Table (3) Results of the t-test on the performance of the members of the study sample in the pre-measurement of the skill performance according to the variable of the group

group	Measuring unit	Arithmetic mean	Standard deviation	T	Freedom degrees	Statistical significance
experimental	Degree of 10	4.63	1.22	0.16	38	0.87
Control		4.57	1.12			

Table (3) shows that the t-test values for the performance of the sample in the pre-measurement of the skill performance according to the variable of the group reached (0.16) which is not statistically significant at the level of significance ($\alpha \leq 0.05$), where the level of significance obtained was greater than the value of the alpha level, indicating the equivalence of the two study groups in the pre-measurement.

Implementation of the study

The study was implemented in a period of (8) weeks and with (3) training units per week where the duration of the unit was (60) minutes. This process continued from 31/1/2016 to 24/3/2016 and included 24 units. Implementation of the post-tests was conducted for the study sample at gymnasium - Yarmouk University between 20-24 / 3/2016.

Study variables:

First: - Independent variable: - The musical rhythm program accompanying the training.

Second: - The dependent variable: - Grades obtained for the skill performance in gymnastics in terms of floor exercise routine.

Statistical treatments:

Statistical processes were used to treat the data, the most important among them were:

1. The application test was carried out and then re-applied to calculate the correlation coefficient of the tests used.
2. The arithmetic means, standard deviations, kurtosis and skewness values were figured out to describe the sample of the study and the sample equivalence in the pre-tests.
3. The t-test was applied in order to verify the significance of the differences between the experimental and control groups in the measures (pre - post) and (post - post).

Results and discussion:

This study aimed at identifying the effect of using the musical rhythm associated with the training program on some compatibility abilities and skill level in gymnastics course. The results of the study were presented according to the sequence of the hypotheses of the study as follows:

Results related to the first hypothesis

which states that "There was a statistically effect at the level of significance ($.05 \geq \alpha$) by using the training program associated with musical rhythm to raise the skill level of female students in the gymnastics course".

To validate this hypothesis, a t-test was applied to the performance of the experimental and control group members for the skill performance level in the measures (pre and post). Tables (8-9) illustrate this.

Table (4) Results of the t-test on the performance of the control group members for the level of skill performance in the measures (pre and post).

Measure	Measuring unit	Arithmetic mean	Standard deviation	t	Statistical significance
Pre	Degree of 10	4.57	1.11	11.08	0.02
Post		5.93	1.25		

Table (4) shows that the value of (t) for the performance of the members of the control group for the skill level in the measures (pre and post) was (11.08), which is a statistically significant value at ($\alpha \leq 0.05$) for the benefit of the post measurement with an arithmetic mean of (5.93) while the arithmetic mean of the pre-measurement was (4.57).

The researchers attribute the difference regarding the control group for the benefit of post measurement to the students' commitment to the training program with absence of music as it contained different exercises for all the skills of the floor exercise routine, resulting in a slight improvement in the skill level of female students in the control group

Table (5) Results of the t-Test on the performance of the experimental group members for the level of skill performance in the measures (pre and post).

Measure	Measuring unit	Arithmetic mean	Standard deviation	t	Statistical significance
Pre	Degree of 10	4.63	1.21	11.08	0.01
Post		7.48	1.19		

Table (5) shows that the value of (t) for the performance of the members of the experimental group for the level of skill performance in both (pre and post) measures was (15.07) which was a statistically significant value at ($\alpha \leq 0.05$). The differences were for the benefit of post-measurements with an arithmetic mean of (7.48),

While the arithmetic mean of the pre-measurement was (4.63) indicating that there was a statistically significant effect at the level of significance ($\alpha \leq 0.05$) for the use of musical rhythm on the level of skill performance in gymnastics among students of the faculty of physical education at Yarmouk University.

The reason for these differences regarding the experimental group can be attributed to the use of the musical rhythm within the training units and its interference with training and exercises for the different skills of the floor mat in gymnastics that students in the experimental group followed, which had a positive impact in developing the level of skill in gymnastics for the experimental group.

Studies have confirmed that music has a clear effect on the movement of a person, this is shown when harmony with a certain musical track appears. Especially that it participates in the development of the sense of movement, improves performance and helps to streamline the movement. In this study, the skill level of the sample members was tested by exercise routine of different skills on the floor mat. The exercise routine was accompanied by a selected musical track. (Hassan, 2011) emphasized that music is a means of controlling good performance according to the type of music chosen for movements. It improves or increases the ability to express movements and helps the learner to control the performance of the movement and find a state of harmony between the parts, especially if the musical track is consistent with the movements required to perform.

The result of this study conforms to the results of the following studies: (ikhweileh, 2015), (Beni Melhem, 2006), (Bewi et al, 2014), (Alrashid, 2015), and (Anshel & Mersi, 2013) which reached to the importance, effectiveness and impact of the use of rhythm and musical rhythm to improve the level of artistic, educational and skill performance for the movements and various exercises, whether in gymnastics or any other games (collective and individual) and whether to raise the level of physical fitness or raise the level of self-satisfaction, improve and develop positive psychological aspects and reduce the negative psychological ones.

- According to the previously mentioned, the researchers believe that the training program for the musical rhythm had an impact on the improvement of the level of skill in gymnastics when performing the total floor exercise routine.

Thus, the hypothesis of the first study was achieved, which states that "There was a statistically effect at the level of significance ($.05 \geq \alpha$) by using the training program associated with musical rhythm to raise the skill level of female students in the gymnastics course."

3.2. Results related to the second hypothesis which states: "There were statistically significant differences at the level of significance ($\alpha \leq 0.05$) in the post-tests of some performance and skill abilities in the gymnastics course between the average performance of students in the (control and experimental) groups and for the benefit of the experimental group".

To verify this hypothesis, a t-test was applied to the performance of the study sample members for some of the compatibility and the level of performance in gymnastics in the two post-measurements according to the group variable. Table 6 shows this.

Table (6) Results of t-test on the performance of the study sample members at the level of skill performance in gymnastics in the two post-measurements according to the group variable

Test	Measuring unit	Measure	Arithmetic mean	S. D	t	N	Statistical significance
Performance skill	Degree of 10	experimental	7.48	1.19	4.19	38	0.01
		control	5.93	1.25			

Table (6) shows that the values of (t) for skill performance in gymnastics were (4.19). This indicates statistically significant differences between the arithmetic means of the performance of the sample members due to the variable of the group and for the benefit of the experimental group.

The researchers attribute the reason behind that to the superiority of the experimental group over the control group in the post-measurement, perhaps to the use of musical rhythm within the training units and its interference with the training and exercises for different skills of the floormat in the gymnastics and exercises conducted by students in the experimental group. Which has had a positive impact on the development of the level of skill performance in the gymnastics of students in the experimental group? This may suggest the assumption that the higher the degree of skill performance, the higher the level of compatibility between the working muscles.

Besides the improvement in time distribution and dynamic performance may led to a smooth performance and gave gymnastics students the right and appropriate time, as well as being attractive to the students what pushed them to continue training without feeling bored and tired.

The musical rhythm in order to develop the level of physical and technical abilities and diversification between them. It seems clear to specialists that the importance of training on the compatibility capabilities in long-term planning aims to reach the highest levels and fulfill achievements, where the basic training aims to develop the compatibility and physical abilities in a variety of ways. The development of knowledge relative to basic motor skills, and the development of the ability to exert effort and stir joy and pleasure is the utmost value. As for the constructive training, it aims to improve the level of physical and skill abilities and increase the components of the training load and promote desire and readiness for athletic achievement. The study conforms with the results of the following studies : (Alrashid 2015), (Anshel and Marisi, 2013), (Swedan, 2012) and (Mesko, 2009).

From the above-mentioned ideas, the researchers conclude that the training program employing the musical rhythm has had the effect of improving the skill level in gymnastics; this was evident from the superiority of the experimental group over the control group in the post-measurement. Thus, the hypothesis of the second study was achieved, which states that "there were significant differences at the level of significance ($\alpha \leq 0.05$) in the post-tests of performance level in gymnastics between the average performance of students in the control and experimental groups and for the benefit of the experimental group."

Conclusions:

In the light of the study results, the researchers reached the following conclusions:

1. The use of the musical rhythm accompanying the training program in the training process has had a positive effect in increasing the skill level of the gymnastics upon students in the experimental group.
- 2 - The use of musical rhythm led to a better level when talking about training motor sports tasks.

Recommendations:

Considering the results of the study which showed the positive effect of the use of musical rhythm on the development and improvement of the skill level of gymnastics upon students, the researchers recommend the following:

- 1 - Using musical rhythm in training and learning gymnastics skills on the rest of the devices.
- 2 - Utilizing musical rhythm in learning sessions, training and improving the performance in other practical courses, especially with the courses that require high consistent performance.
- 3 - Conducting more studies to figure out the impact of musical rhythm on the skill level of specific sports, as well as using other samples for further studies on the same research line as teams' clubs and national teams.

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