The effectiveness of using dance training methods for the education of artistry in athletes in rhythmic gymnastics aged 8-10 years

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Abstract

Background and purpose
Modern trends in artistic gymnastics aim not only to develop the gymnast’s ability to perform complex technical elements with their body and apparatus but also to convey the composition’s idea and create a unique persona. Exploring the possibility of integrating dance training methods into gymnasts’ educational and training process is necessary to nurture artistic mastery. The objective is to determine the effectiveness of incorporating dance training methods in fostering the artistry of gymnasts in the basic training group.

Material and methods
The research was conducted at the Solonitsivska Children’s and Youth Sports School “Kolos”. The experiment involved 20 athletes from the artistic gymnastics department’s basic training group. To obtain high-quality results, the gymnasts were divided into two levels (control (n = 10) and experimental (n = 10)) based on competition outcomes. To achieve the goal and address the tasks set, we employed and applied the following research methods: analysis of scientific-methodical and specialized literature, pedagogical observation, pedagogical testing, pedagogical experiment, and methods of mathematical data processing.

Results
In recent years, rhythmic gymnastics has undergone significant rule changes in competitions, leading to increased demands in assessing artistry, compositional originality, and performance mastery. Alongside the high-level technical skills of gymnasts, artistry is a crucial aspect that has made rhythmic gymnastics popular worldwide. Incorporating various types of dance training into the educational and training process, including choreographic training, contemporary choreography techniques, music and rhythm exercises, musical games, historical and ballroom dance exercises, free-form exercises, improvisation, and pantomime, allows for the elevation of artistic expression in competitive routines. In the experimental group, following the research, a significant improvement was observed in rhythm perception (p<0.05), the quality of plastic movements (“waves”) (p<0.01), and performance evaluation of dance combinations (p<0.05). This improvement in performance assessment translated to a significant reduction in deductions for artistic errors and a corresponding increase in scores (p<0.05) during competitions.

Conclusions
The use of dance training tools, which include classical choreography exercises, folk choreography exercises, artistic and stage skill tools, and modern types of choreography, contributes to the development of artistic abilities and artistic expressiveness of gymnasts in basic training groups. A particularly positive effect was noted when performing dance combinations (p<0.05), reproducing an image, motor-plastic expressiveness (p<0.01), developing a sense of rhythm (p<0.05), and improving the quality of competitive activity (p < 0.05).

Keywords: rhythmic gymnastics, artistry, dance training, basic training group
Анотація

Лілія Папка, Юлія Голенкова, Тетяна Карпунець. Ефективність використання засобів танцювальної підготовки для виховання артистизму у гімнасток 8-10 років

Обґрунтування і мета
Сучасні тенденції розвитку художньої гімнастики спрямовані не тільки на формування у гімнастки вміння виконувати складні технічні елементи тілом і з предметом, а і передати ідею композиції, створити власний образ. Для виховання артистичної майстерності необхідно дослідити можливість застосування засобів танцювальної підготовки в навчально-тренувальному процесі гімнастки. Мета: визначити ефективність застосування засобів танцювальної підготовки для виховання артистизму гімнасток групи базової підготовки.

Матеріал і методи
Дослідження проводилось на базі Солоніцівської ДЮСШ «Колос». В експерименті взяли участь 20 спортсменок групи базової підготовки відділення гімнастика художня. Для отримання якісних результатів гімнастики були поділені на дві рівні групи (контрольна (n = 10) та експериментальна (n = 10)) за результатами змагань. Для досягнення мети та вирішення завдань, які були поставлені, нами було використані та застосовані наступні методи дослідження: аналіз науково-методичної та спеціальної літератури, педагогічне спостереження, педагогічне тестування, педагогічний експеримент, методи математичної обробки матеріалу.

Результати
В останні роки художня гімнастика зазнає значних змін у правилах змагань, що призводить до підвищення вимог до оцінки артистизму, орієнтаційної композиції і майстерності виконання. Поруч з високою виконавчою майстерністю гімнасток, ефектності композиційних вправ і високий технічний рівень виконання йде артистична майстерність, що робить художню гімнастику популярною у всьому світі. Введення до навчально-тренувального процесу різних видів танцювальної підготовки (хореографічна підготовка, засоби сучасної хореографії, вправи музично-ритмічного виховання, музичні ігри, вправи історико-літературних і бальних танців, вправи вільної пластикі, імпровізація, пантоміміка) дає змогу підвищити рівень артистизму при виконанні змагальних вправ.

В експериментальні групи після проведення дослідження було виявлено підвищення рівня відчуття ритму (р<0,05), якість виконання пластичних рухів («хвилі») (р<0,01). При оцінюванні виконання танцювальних комбінацій спостерігалось підвищення оцінки за виконання (р<0,05), що відобразилось і на оцінюванні артистизму на змаганнях суттєвим зменшенням збавок за артистичні помилки і відповідним підвищенням оцінки (р< 0,05).

Висновки
Використання засобів танцювальної підготовки, які містять у собі вправи класичної хореографії, народної хореографії, засоби артистичної та сценічної майстерності, сучасні види хореографії сприяють розвитку мистецьких здібностей та артистичної виразності у гімнасток групи базової підготовки. Особливо позитивний вплив спостерігається при виконанні танцювальних комбінацій (р<0,05), при відтворенні образу, руково-плазичної виразності (р<0,01), виконання початку ритму (р<0,05) та підвищення якості змагальної діяльності (р < 0,05).

Ключові слова: гімнастика художня, артистизм, танцювальна підготовка, група базової підготовки
Introduction

In modern rhythmic gymnastics, there are significant changes in the rules of competitions, which set higher requirements for the assessment of artistry, originality of compositions, and performance technique. The impressive performance skills of gymnasts, the effectiveness of compositional exercises, and the high level of technique are important factors that popularize artistic gymnastics at the world level. Growing competition requires gymnasts and their coaches to improve the originality of competitive exercises constantly. By using elements of dance art in their compositions, gymnasts can demonstrate bright and fiery performances with dance elements and unique choreography, which will fall into the hearts of every audience and will be highly appreciated by the judges.

Education of athletes in rhythmic gymnastics at a high level is a long-term process that must be systematic, scientifically based, and time-tested. Modern researchers are studying the aspects of improvement of various types of gymnasts training at the stages of long-term training. The issue of improving technical training was studied by Andreyeva [1]. A number of authors paid attention to and studied the influence of the use of psychological training tools by gymnasts in the training process on the level of preparedness and functional state [2, 3].

The research of the authors Purenović-Ivanović, et al. [4] consisted of establishing the body structure profile of gymnasts of different age categories in order to check and determine the possibility of predicting performance success in rhythmic gymnastics based on body structure parameters gymnast.

Experts paid attention to the influence of folk choreography tools on the development of expressive and plastic movements in gymnasts of the elementary training group Kravchuk, et al. [5].

Dance training also plays an important role in the educational and training process, taking into account its mutual influence, features and prospects in the next Olympic cycle.

Over many centuries, with the development of culture and society, choreographic art expanded its boundaries and evolved, changing dance genres and forms. During its long development path, the dance experienced various changes. Old dance styles went out of use, disappearing, and new types of dance appeared, enriching the vocabulary of dance movements. Each new historical era in culture was marked by the appearance of new dance movements that supplanted the former genres popular in earlier times and became a reflection of the spirit of their period.

So, dance has always reflected the peculiarities of a specific era and time, as well as society's attitude to this art. The simplest forms and genres of dance that existed in ancient times arose on the basis of the practical needs of people, rites, and pagan rites, and they reflected the living conditions and worldviews of that time. Each culture and people had their own traditions in choreographic art, a unique language of movement and plastic expression, as well as a special relationship between movement and music.

The training of gymnasts includes a variety of choreographic methods and means that combine classical, folk, historical, ballroom, and modern dance, as well as their combination. An important component of this training is the study of elements of jumps, spins, balance exercises, tilting, free plasticity, musical and rhythmic training, pantomime, improvisation, and other aspects [6, 7, 4].

Specialists in the field of artistic gymnastics, [7, 8, 9], claim that the basics of classical dance play a major role at the initial stage of training. Classical dance serves as a fundamental element in learning any kind of dance and is considered one of the main aspects of choreographic art. The main goal and tasks of training gymnasts in classical dance is the development of elegance of movements, and the improvement of their purity, grace, lightness, and expressiveness [10]. While performing classical exercises, gymnasts form the correct body posture and develop stability, flexibility, and coordination of movements. These skills enable them to perform technically correct choreography and dance elements during competitive performances. Folk stage dance exercises are an important component of the choreographic training of gymnasts and include various movement elements [11, 12, 5]. These movements can be used in folk stage exercises or during training in musical and rhythmic training, improvisation, and other activities. In addition, the creation of competitive exercises is an important part of training, and they increasingly include folkloric motifs. Emotionality, brightness, and expressiveness of both movements in folk dance and musical accompaniment are especially important for modern gymnasts. Elements of ballroom dancing are widely implemented in choreographic classes with gymnasts and in the creation of competitive exercises in artistic gymnastics. They contribute to the development of dancing skills, musicality, and expressiveness.
In preparation for performances, gymnasts also use modern stage dance, known as contemporary. This style arose as a combination of modern and postmodern dance and is noted for its own uniqueness. It includes elements of various dance directions and covers exercises from gymnastics, yoga, and pilates with the help of improvisation. An important feature of contemporary is the absence of traditional ballet attributes and an emphasis on work on the floor.

Therefore, modern means of choreography are widely used in artistic gymnastics during the creation of competitive compositions at all stages of the long-term training of gymnasts. A characteristic feature of artistic gymnastics is the high emotionality of movements and their direct interaction with music and dance elements. The harmonious combination of movements with musical accompaniment gives the exercises the character of a dance and gives them integrity, fusion, and a dynamic structure.

At the stage of initial training, it is recommended to use the elements of dance training in accordance with the curriculum of the State University of Applied Sciences. Athletes train three times a week, and the time allocated to choreography and dance training varies from 15 to 25 minutes a week, depending on the year of study. During this period, the main emphasis is on the general development of the child and learning the basics of gymnastics. Choreographic and dance training classes at the initial training stage are conducted using tools aimed at developing choreographic training through play and dance, children learn to control their body and movements. During this period, emphasis is placed on the development of inversion and flexibility, the study of dance steps and body posture. The positions of the hands and feet are carefully studied. Classic exercises are performed first on the floor, and then near the support. Special attention is paid to musical and rhythmic training, which includes teaching children to accurately express the nature of music through movements and reproduce the tempo and rhythm of a musical piece. Choreographic and dance training at this stage uses such methods as reproducing the nature of music through movements, recognizing basic musical and movement concepts, learning dance steps (polka and waltz steps), musical games, movement tasks, dances and improvisation in the style of classical exercise [5,8,9].

The stage of basic training is key in the training process of gymnasts, and therefore we put the main emphasis on this stage. During the basic training, a lot of attention is paid to choreographic training in educational and training classes. In combinations, separate elements of classical dance are performed near the support and in the middle of the hall. Gymnasts learn basic dance steps and combinations. The choice of musical compositions for performance takes into account the age capabilities of the gymnasts. At this stage, priority is given to the technique of performing dance compositions, and the study of different styles and directions of dance art. Musical and rhythmic training is aimed at coordinating movements with musical rhythm, the ability to listen to music and express emotions through movements. The main means of choreography include classical, historical, and contemporary dance. At this stage, special attention is paid to the development of the individual style and artistic expression of each gymnast.

At the stage of preparation for higher achievements, the main attention is paid to improving choreographic and dancing skills. The expressiveness and artistry of performances are carefully improved, and more complex dance movements and combinations are studied. Various dance styles are used during classes, such as contemporary, jazz, waltz, rumba, pasodoble, rock and roll, and others. At each of these stages, the individual characteristics of each gymnast are necessarily taken into account, allowing them to choose the style and image of dance training that best expresses their strengths.

Purpose: to determine the effectiveness of the use of dance training tools for nurturing the artistry of gymnasts of the basic training group.

Material and methods

Participants

The research was conducted at the Solonitsivska Children's and Youth Sports School "Kolos." The experiment involved 20 athletes from the artistic gymnastics department's basic training group. To obtain high-quality results, the gymnasts were divided into two levels (control (n = 10) and experimental (n = 10)) based on competition outcomes. The control group trained according to the annual plan of the basic training group, and the subjects of the experimental group also trained according to the annual plan of the basic training group, but with the use of developed complexes and tasks from various types of dance training in the training sessions. To achieve the goal and address the tasks set, we employed and applied the following
research methods: analysis of scientific-methodical and specialized literature, pedagogical observation, pedagogical testing, pedagogical experiment, and methods of mathematical data processing.

Procedure

The experiment was conducted in four stages and lasted from October 2022 to October 2023. In the first stage (October-November 2022), the study and analysis of modern scientific and methodological literature on the subject of the study took place. At the second stage (December 2022 - February 2023), the means of various types of dance training were selected, sets of exercises were developed, and a mesocycle plan was drawn up for gymnasts of the basic training group. During the third stage (March - June 2023), a pedagogical experiment was conducted with testing at the beginning and at the end of the study. The processing and generalization of the test results of the researched subjects were carried out in the fourth stage, which lasted from July 2023 to October 2023.

The methodology for assessing the development of artistry in gymnasts at the basic training level groups

The criteria for assessing artistry in rhythmic gymnastics include the presence of dance steps, body and face expression, dynamic changes, body and subject effects with music, variety, use of the platform, unity, combination, and rhythm. The team of judges (A) in the assessment of artistry focused on the expressive performance of the composition, with the manifestation of originality of elements and movements. Judges of this group do not take into account the difficulty of the exercise but only apply a reduction of points for errors in artistry.

According to the current rules of rhythmic gymnastics for the period 2022-2024, in each competitive exercise, there must be two dance combinations of 8 seconds each. Combinations of dance steps - a certain sequence of movements of the body and an object intended to express a stylistic interpretation of music. In dance combinations, there should be a certain character in the movements in accordance with the character, tempo, rhythm, and accents in the music.

Thanks to expression, the gymnast transforms a structured exercise into an artistic performance based on expressive movements. Body expression includes a combination of strength and grace, creating movements that can convey character, facial expressions that reproduce an emotional response to music, and accents and intensity of character movements. Due to insufficient development in the composition of the body expression of the judge of the brigade (A), allowances are given.

Dynamic changes in the exercises are used to change the speed and intensity of the music. A lack of contrasts can create monotony and a loss of interest in the judges. If the composition does not have two dynamic changes, which will be present throughout the exercise, then liberties are used.

The effects of the body and the object include a unique interaction of music with special movements that are developed by the gymnast and her coach. This feature of the composition makes it unique and distinguishes it from other exercises.

The main goal of the performances is to create a harmonious connection between all artistic elements aimed at forming a single idea. Continuity of movements with the expressiveness of the body from the beginning to the end of the performance establishes harmony and unity.

The correct and logical combination of specific movements among themselves also plays an important role in creating artistry. All movements must be closely interconnected, one element must pass into another without breaks and interruptions. Any illogical combinations of movements are subject to a reduction of points, reducing by 0.1 points for each case. The movements of the body and the object must correspond exactly to the musical accents and phrases. They should express the rhythm and tempo of the music. The end of the performance should be clear with the end of the musical accompaniment. If the gymnast completes the performance and takes the final position before or after the end of the music, the judges of team A will reduce the gymnast’s points.

Analyzing the current rules of rhythmic gymnastics competitions, we selected appropriate tests to study the effectiveness of the developed dance complexes and tasks, which allowed us to assess the level of artistry of the gymnasts of the control and experimental groups in accordance with the judging criteria of the brigade (A):

1. Evaluation of the performance of dance combinations to determine the level of dance training (nature of movements, dynamic changes, sense of space, use of different types of steps, unity of movements, logic of combination): the gymnast performed a dance combination to a given piece of
music lasting 8 seconds.

2. Evaluation of the "wave" exercise to determine the quality of the performance of rhythmic movements: from the starting position, the subject had to perform a wave-like movement forward, starting from the knees, then the hip, lumbar, and chest sections. The "wave" ended with the movement of the shoulders, head, and hands.

3. Tasks for different rhythmic patterns (determining the sense of rhythm): the gymnasts clapped to the given rhythmic patterns while walking.

4. Analysis of competitive evaluations of courts of brigade A to determine the effectiveness of artistic skill training.

Statistical analysis

When dividing into two groups for equality, the results of the previous competitions were used according to the artistry scores of the judges of the brigade (A). At the beginning of the experiment, preliminary data were obtained according to the tests described above to determine the initial level. After conducting educational and training classes according to the developed complexes and tasks of dance training. To determine the effectiveness of this technique, in the end, testing was conducted, the results of which were compared with previous results. Using the methods of mathematical statistics (Student's t-test), the probability of the obtained data was determined.

Results

At the beginning of the study, the control and experimental groups showed average test results. Thus, the assessment of dance steps was 6.7±0.35 in the control group and 6.5±0.48 in the experimental group. When performing the "wave" exercise, the average arithmetic scores in the control group were equal to 3.4±0.23, and in the experimental group 3.5±0.24. The number of correctly completed tasks on the sense of rhythm in the control group was equal to 2.8±0.26, and in the experimental group, it was 2.9±0.25. Analyzing the obtained data, the presence of average indicators was determined (Table 1).

<table>
<thead>
<tr>
<th>Test name</th>
<th>Group</th>
<th>Before the experiment</th>
<th>After the experiment</th>
<th>t</th>
<th>P (&gt;,&lt;)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evaluation of the combination of dance steps (points)</td>
<td>CG</td>
<td>6.7±0.35</td>
<td>7.0±0.42</td>
<td>0.5</td>
<td>&gt; 0.05</td>
</tr>
<tr>
<td></td>
<td>EG</td>
<td>6.5±0.48</td>
<td>8.3±0.45</td>
<td>2.8</td>
<td>&lt; 0.05</td>
</tr>
<tr>
<td>Evaluation of the &quot;wave&quot; exercise (points)</td>
<td>CG</td>
<td>3.4±0.23</td>
<td>4.1±0.25</td>
<td>2.1</td>
<td>&lt; 0.1</td>
</tr>
<tr>
<td></td>
<td>EG</td>
<td>3.5±0.24</td>
<td>4.5±0.18</td>
<td>3.4</td>
<td>&lt; 0.01</td>
</tr>
<tr>
<td>Rhythmic ability testing (number of times)</td>
<td>CG</td>
<td>2.8±0.26</td>
<td>3.4±0.32</td>
<td>1.8</td>
<td>&gt; 0.05</td>
</tr>
<tr>
<td></td>
<td>EG</td>
<td>2.9±0.25</td>
<td>3.8±0.26</td>
<td>2.5</td>
<td>&lt; 0.05</td>
</tr>
<tr>
<td>Grades of brigade A (points)</td>
<td>CG</td>
<td>6.8±0.13</td>
<td>7.0±0.05</td>
<td>1.7</td>
<td>&gt; 0.05</td>
</tr>
<tr>
<td></td>
<td>EG</td>
<td>6.9±0.14</td>
<td>7.4±0.13</td>
<td>2.7</td>
<td>&lt; 0.05</td>
</tr>
</tbody>
</table>

During the research, the gymnasts of the experimental group used the means of dance training in the educational and training process during the mesocycle. The developed complexes included choreographic training exercises, modern choreography tools, musical and rhythmic education exercises, musical games, historical and domestic and ballroom dance exercises, free plastic exercises, improvisation, and pantomime.

To check the effectiveness of the developed complexes, at the end of the experiment, the gymnasts of the control and experimental groups completed the test tasks. According to the results of this testing, a significant improvement in the assessment of dance combinations in the experimental group by 1.8 points was found (p < 0.05). In the subjects, there was an increase in the sense of space, amplitude of movements, artistic expression of the face,
brightness of the image, use of body effects, which was reflected in the obtained points, which changed in the direction of increase from 6.5 points ±0.48 to 8.3 points ±0.45 (at p < 0.05). At the same time, an improvement of only 0.3 points (p > 0.05) was observed in the control group (table 1).

Performance of the tasks of the rhythmic ability test improved in the experimental group by 0.9 times (p < 0.05), and in the control group it improved by 0.6 times (p> 0.05). As a result of the introduction of a set of "wave" exercises, which were performed in different directions, with different parts of the body, in different planes to musical accompaniment, which was reflected in the change in scores towards improvement in the experimental group from 3.5 points to 4.5 points (p < 0.01). There was a probable increase in scores for performing wave exercises in the control group by 0.7 points (p<0.1), since the techniques of performing wave exercises were practiced in the educational and training process of this group.

The increase in marks for artistic skill by gymnasts at competitions after the experiment was more revealing. Preliminary estimates were equal in the control group 6.8±0.13 and in the experimental group 6.9±0.14. The use of various means of dance training contributed to the reduction of losses due to artistic mistakes by the gymnasts of the experimental group. An increase in grades by 0.5 points (p<0.05) was noted. In the control group, an increase in grades by 0.2 points was observed, but the result is not probable (p > 0.05) (Figure 1).

**Discussion**

The problem of artistic training in rhythmic gymnastics requires careful study in connection with the high requirements for the artistic performance of competitive exercises. Currently, specialists have begun to investigate aspects of artistic training. So, in the studies of Carbinatto MV, et al [11] defined the need to use dance and stage art exercises to combine the technical and aesthetic performance of the composition. Our research confirmed these data: performance of pantomime exercises, composition of dance combinations to various musical works, and reflection of the image with movements had an effect on the improvement of reproduction of the idea of the composition.

The application of the number of choreography exercises in the compositions of gymnasts was analyzed in the study of Furtado, et al [13] which confirmed our assumption about the need to use all areas of choreographic training. The obtained results of the study, which proved the effectiveness of the use of dance training tools in the development of artistic skill in 8-10-year-old gymnasts, complemented the research of Gantcheva, et al [14], who studied the problem of developing artistic abilities in the training of 7-8-year-old female athletes in rhythmic gymnastics.

A comparative analysis of the use of means of the expressive and poetic aspect in gymnastics for all and in artistic gymnastics, which were used in their scientific studies by Menegaldo, et al [10], was carried out in order to identify common effective means for nurturing artistry in female athletes in rhythmic gymnastics.

In scientific papers, Reaboi, [15] investigates
teaching expressiveness of artistic movements in sports compositions at the initial stage of training in artistic gymnastics. We continued the study of the peculiarities of teaching the means of artistic skill at the stage of specialized basic training.

The positive influence of folk choreography on the development of plastic movements, which was investigated by specialists Kravchuk, et. all [5], was confirmed and supplemented.

Conclusions

The use of dance training tools, which include classical choreography exercises, folk choreography exercises, artistic and stage skill tools, and modern types of choreography, contributes to the development of artistic abilities and artistic expressiveness of gymnasts in basic training groups. A particularly positive effect was noted when performing dance combinations (p<0.05), reproducing an image, motor-plastic expressiveness (p<0.01), developing a sense of rhythm (p<0.05), and improving the quality of competitive activity (p<0.05).

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Conflict of interest

The authors declare that there is no conflict of interest.

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