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## *Dance Steps in Rhythmic Gymnastics for Elementary School Children*

*[Los pasos de danza en la categoría pioneril de gimnasia rítmica]*

*[Passos de dança na categoria pioneira de ginástica rítmica]*

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### **ABSTRACT**

**Introduction:** In rhythmic gymnastics, music, and movement are a single part; they are features and requirements of music for competitive exercise, the character of artistic performance, as aspects governed by the International Federation of Gymnastics.

**Aim:** To design a methodology for improving dance steps in artistic education received by elementary school students of artistic gymnastics in Holguin province, for further



implementation.

**Materials and methods:** The methods used were empirical: interview, observation, measurement, document review, triangulation, expert opinions, pre-experiment, and theoretical and mathematical-statistical methods. The sample population consisted of three teachers and 24 gymnasts in the elementary school category attending the two sports complexes in the municipality of Holguín.

**Results:** The measurements tackled the assessment of dance step learning combined with music, through rhythmic movement tests, spatial design, and improvisation, with assessment of basic elements of rhythm, hearing accuracy, movement execution, movements on the floor, and coordination, which are a major contribution to improving the Comprehensive Athlete Learning Program, with advances in the assessment of dance steps in the provincial competition.

**Conclusions:** The methodology suggested for teaching dance steps proved that the female gymnasts raised their rhythm capacity, with impressive mastery of the dance steps.

Keywords: elementary school category, teaching-learning, dance steps, rhythm.

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## **RESUMEN**

**Introducción:** en la gimnasia rítmica, es fundamental la unión música, movimiento, características y requerimientos que hoy poseen las composiciones de los ejercicios competitivos, así como el carácter de su ejecución artística como aspectos que aparecen normados por la Federación Internacional de Gimnasia.

**Objetivo:** diseñar una metodología para desarrollar la educación artística de los pasos de danza en las gimnastas de la categoría pioneril de gimnasia rítmica de Holguín para su concreción en la práctica.

**Materiales y métodos:** se emplearon como métodos empíricos: la observación, entrevista, medición, análisis de documentos, la triangulación metodológica, criterio de expertos, pre-experimento, combinados con otros teóricos y matemáticos-estadísticas.

La muestra se conformó por las tres profesoras y 24 gimnastas de la categoría pioneril de las dos áreas deportivas del municipio Holguín.



**Resultados:** las mediciones se dirigieron a valorar el aprendizaje de los pasos de danza en la ejecución con la interpretación musical, mediante las pruebas de desplazamiento rítmico, diseño espacial e improvisación, valoramos elementos básicos del ritmo; agudeza del oído, la ejecución de los movimientos, desplazamiento en el tapiz y la coordinación, que constituyen un valioso aporte para el perfeccionamiento del Programa de Preparación Integral del Deportista, se destacan los avances en la evaluación de los pasos de danza en el evento provincial.

**Conclusiones:** se logró comprobar que la metodología propuesta para la enseñanza aprendizaje de los pasos de danza, las gimnastas elevaron el nivel de desarrollo del ritmo, ejecutando con mayor maestría los pasos de danza.

**Palabras clave:** categoría pioneril, enseñanza-aprendizaje, pasos de danza, ritmo

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## RESUMO

**Introdução:** na ginástica rítmica, a união de música, movimento, características e requisitos que hoje têm as composições dos exercícios competitivos, bem como o caráter de sua execução artística são fundamentais, como aspectos que parecem ser regulamentados pela Federação Internacional de Ginástica.

**Objetivo:** elaborar uma metodologia para desenvolver a educação artística de passos de dança em ginastas da categoria pioneira de ginástica rítmica em Holguín para sua aplicação prática.

**Materiais e métodos:** Foram utilizados os seguintes métodos empíricos: observação, entrevista, medição, análise de documentos, triangulação metodológica, julgamento de especialistas, pré-experimento, combinados com outros métodos teóricos e matemático-estatísticos. A amostra foi composta por três professores e 24 ginastas da categoria pioneira das duas áreas esportivas do município de Holguín.

**Resultados:** as medições tiveram como objetivo avaliar a aprendizagem dos passos de dança na execução com interpretação musical, por meio dos testes de deslocamento rítmico, desenho espacial e improvisação, avaliamos elementos básicos do ritmo; acuidade auditiva, execução de movimentos, deslocamento no tapete e coordenação, que



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constituem uma contribuição valiosa para a melhoria do Programa de Preparação Integral do Atleta, destacam-se os avanços na avaliação dos passos de dança no evento provincial.

**Conclusões:** foi possível comprovar que a metodologia proposta para o ensino e aprendizagem dos passos de dança, as ginastas elevaram o nível de desenvolvimento rítmico, executando os passos de dança com maior domínio.

**Palavras-chave:** Categoria pioneira, ensino-aprendizagem, passos de dança, ritmo.

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## *INTRODUCTION*

Dance or dancing is the set of movements executed by the body, especially the arms and legs, which follow the music for dancing. It helps develop the senses, perception, motor capacities, and integration of a person's physical and psychic sides, rhythm, body expression, movement, space, and color. In rhythmic gymnastics, dance emphasizes the need to transmit emotions and communicate a message to the audience.

Music must be coherent, with a marked, clear, and effective rhythm to stress movement cadency, which could be previously composed or adapted for exercise. A composition that agrees with exercise only at the beginning and at the end is known as background music, and it is penalized 0.50 points by the Coordinating Judge, according to the Scoring Code.

Several authors, like Amengual, M. and T. Lleixà, 2011; Aguirre-Loaiza, H., Ayala, C. & Ramos, S, 2015; Gato González, E. M, 2015; Sánchez, V. and L. Roque, 2015; Batista, A, et al., 2017; Estupiñán, 2019; Fuentes, 2020; García Gutiérrez A. D.; Peñate I.; Paz Gómez O, 2021, mentioned the need to have music as a complementary stimulant for sports and social activities that favor plasticity, motor coordination, rhythmic sensation, and expression strength during the development of basic motor skills explained in the laws, principles, and categories of pedagogy.



Rhythm has another dimension as the endless series of combinations; it is regulated and measured movement, space and time order and proportion, speed, coordination, and width, which are all necessary to express essential feelings, emotions, circumstances, thoughts, or ideas for rhythmic gymnastics.

Rhythmic gymnastics as a coordinated sport, competitive art, and early specialization, is abundant with psycho-motor reactions, elegance, creativity, and a high level of focus and attention. It facilitates the creation and speed up of the learning and acquisition of different movement techniques determined by the Integrated Sports Training Program (PPID), and national announcements for every category, with different levels of requirements, according to the National Commission. In the 2009-2012 Olympic cycle, the president of the International Gymnastics Federation (IGF), Bruno Grandi, said that rhythm is music, movement, and equipment, and added that their "discipline should be listened to and expressed, inspired by and through the music. It is the melody that gives life and rhythm to the sport." In turn, the president of the technical committee requested a redesign of this concept, so that it suits gymnasts when they dance, move, and recover what used to be done in rhythmic gymnastics, to demonstrate the capacity of interpreting and handling the equipment. "Rhythmic gymnastics cannot be conceived without music, it is necessary in training and lessons as in competitions, in which participation is not conceived without music.

Dance steps (S) must be performed for at least eight seconds, starting with the first movement; every step must be clear and visible during the performance, by time, rhythm, musical character, and accent, using at least two different variations of movement: modality, directions, or levels. They help increase movement width and variety, strengthened by the apparatus difficulty (AD), main apparatus difficulty, and body difficulty (BD) by jumping, balancing, or rotating, and a top score of 0.10 points if the dance is not interrupted.



This paper showed that participation in the Pioneril Cup (elementary school students) as well as the creation of optional individual exercises with the hands, apparatus (rope), and duets, requires the combination of dance steps (between three and five, maximum), each scoring 0.30 points. This way, the body difficulties demanded are higher; hence, this topic has great relevance, provided the gymnast performs her execution fully. Consequently, teachers must take scientific-pedagogic training to develop and strengthen the sport.

Working with primary school children demands patience from teachers, who must offer explanations according to the characteristics of the gymnasts, with full access that contributes to a systematic increase in gymnasts' knowledge and skills. Teachers are the ones who manage the composition of competitive exercises. Therefore, mastery of general pedagogic methods is fundamental to educating gymnasts not only to learn dance steps in rhythmic gymnastics but also in their overall education.

This research study is one of the tasks of the research project High-Performance Sports Training Management at the Physical Culture Faculty of Holguin, Cuba, which includes teacher coach preparedness in the province. The theoretical study included the review of documents such as the sports methodological guidelines, athlete training programs (PIPD), the national elementary school student announcements, and the scoring system. The exploratory stage consisted of a diagnostic study which helped identify some theoretical and practical shortcomings. Methodological flaws in the teaching and learning of dance steps in rhythmic gymnastics: Poor teacher preparedness to manage musical education-technical execution interrelation.

The gymnasts perform technical elements out of tempo, without the necessary accuracy and proper step-dance coordination. In main competitions, there are artistic and technical flaws that show inadequate dance step training. Accordingly, the problem of this research study derives from findings that confirm the need to broaden the theoretical and methodological knowledge of teachers during the teaching and learning of dance steps. This will enable a series of tasks to be performed by the gymnasts that result in improved execution of a particular technical move. Hence, the aim of this paper



is to design a methodology for developing artistic education emphasizing dance steps in elementary school gymnasts.

## *MATERIALS AND METHODS*

This study relied on the general dialectic-materialist approach, along with other methods and techniques. It is based on a qualitative and sequential approach, with an intentional sample (non-probabilistic), and the population was made up of technical commissioners, provincial officials, and sports teachers with expertise.

The historical-logical method was the theoretical method used to determine the background, including the contributions and shortcomings, and know the control of step dance assessment, based on the International Federation of Gymnastics.

The analytical-synthetic method was used to characterize the teaching-learning process of dance steps in gymnastics, involving elementary school children. The inductive-deductive method helped establish essential logical relationships during the research process, as well as data interpreting, and creating new links and interactions during the research. The systemic-structural-functional method was useful in determining essential relationships between the dimensions for the conception and structuring of the methodology suggested.

The empirical method used was non-participatory scientific observation, which was used to check the development of the teaching-learning process in dance step training, by observing several lessons. The interview focused on gathering information about sports activity and the willingness of gymnasts for the practice of rhythmic gymnastics. Documentary analysis consisted of reviewing PPID, the scoring code, methodological training plans, and school programs. Experimentation: A pedagogic pre-experiment was performed as a methodological variant that measured the dance steps in the control group in the sample selected, initially and following the implementation.





The content was sectioned according to the assessment of distinctive elements associated with the artistic component (0.30-1.00-point penalties). The teaching-learning process of the dance steps in elementary school children is within the ideal stage for sports initiation, especially if the subject has the conditions for the sport, following a deep characterization that permits experts to assess the athletes' real possibilities for the practice of the sport, and, secondly, have the necessary tools for follow-up. The content was analyzed through expert opinion (experienced specialists and teachers). The consensus method was useful to determine the feasible and viable character of the content.

#### Sample:

The sample was selected intentionally (non-probabilistic) and was made up of the eight teachers of the junior category in the municipality of Holguin and 24 gymnasts qualified for the municipal competition, belonging to the Martires de Oriente and Marta Garcia sports complexes, where this study took place.

The professional experience in the sport was an indicator for the selection of the sample, and its relation to academic and scientific competency, to support the capacity for professional performance. Other subjects in the sample were the provincial rhythmic gymnastics commissioner, the leading authority in the province, as well as two specialists in the sport, due to their experience and professionalism, who provided relevant information and worked as advisors in all the stages of this research.

From a statistical-mathematical perspective, the percentage calculation and descriptive statistics were used to represent the results, interpretation, and quantitative assessment.

Dependent variable: The dance steps of rhythmic gymnastics are placed into context due to the artistic and esthetic benefits, and educative value that arises as a significant source of creativity for the development of personality. This resource permits the articulation of psychology, pedagogy, the arts, and music.



Therefore, dance is a tool that can promote talented gymnasts creatively and adequately, in addition to stimulating communication and social habits. Dance exercises are used for training because they contribute to a culture that suits the requirements of the sport. Gymnasts show their technical performance level when executing the many moves of the sport, the level of education associated with the different motor skills and movement esthetics, only if teachers can inculcate the art of learning to listen and interpret the music through movements, and execute their moves with an excellent body technical perfection that will ensure a high score.

The components' values increase according to their indicators. In children's rhythmic gymnastics dance steps should be assessed systematically and comprehensively, which is interpreted as the final result. Three fundamental dimensions are structured within the teaching-learning process. They stem from the developing conception and have a comprehensive approach, considering the individual potentialities as strengths for the educative process of gymnasts, and based on the age-related categories.

#### 1. Rhythmic movement dimension

It will depend on its implementation. It entails how the different actions are executed, through content, in terms of natural displacement movement combinations, such as observation, comprehension, and execution (walking, running, jumping), (running, walking, crawling), (jumping, running, walking).

The action becomes a gymnast's skill through interaction with the teacher. Constant execution of the method and its utilization. It involves movement, variety, change, diversity, and action; it is professional mastery from a methodological perspective, and it is enrichment considering the new knowledge gymnasts acquire and put into practice. Teacher guidance plays a major role in stimulating moves, changes of position, energy, will, liberty, and systematicity. Gymnasts take an active part throughout the lesson, showing their learning capacities, while moving around the space spontaneously. Gymnasts are capable of imitating their teacher's moves and those of their peers by integrating visual and hearing methods with rhythmic and musical sounds.



## 2. Spatial design dimension

This coordinating capacity is performed through scientific tools that guarantee a cognitive-affective state of rhythms linked to personality. The effectiveness of the integrated method lies in conceiving what is needed and how much knowledge they can acquire through combination contents for executing exercises and natural displacement movements. The combination of basic movement forms (head, arms, trunk, hands, legs, and feet) allows the gymnasts to harmonize and stimulate the body, giving it active engagement. Concerning body build, gymnasts unveil their bodies to the ones surrounding them while mental analysis takes place. Teachers, in turn, stimulate them systematically, favoring the posture needed for the sport, and keeping the adequate posture for each activity, thus preventing spine deviations.

## 3. Improvisation dimension

It overtakes the traditional way of developing the coordinating capacity, using different contents (combinations), productive, sensorial-perceptive methods, and practical methods along with integrated teaching styles emphasizing aspects like imagining, thinking, transforming, and stimulating, which permits the creation of experiences through activity.

Practical methods for stimulating rhythmic gymnastics dance steps in elementary school children allow them to harmonize their bodies with time, space, and movement dynamics. Creativity is understood as body movements like thinking, choosing, imagining, discovering through the body, and using rhythmic structures of natural movement combinations of locomotion (walking, running, and jumping), (running, walking, and crawling), jumping, running, and walking), and the way they athletes want to do it. Hence gymnasts interact with the need of moving and the freedom of moving, depending on their execution possibilities. Spontaneity and sensorial stimulus integration (visual, hearing, and motion) are articulated in activities that promote dance steps as moves.



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## *RESULTS AND DISCUSSION*

The research had three stages: instruction, implementation, and assessment of dance steps with and without apparatus.

The instruction stage comprises the methodological course that permits teacher training, with an in-depth study of the theory and practice of dance steps in rhythmic gymnastics for elementary school children, its relevance and repercussions on the competitive results, the tests to determine the gymnasts' potentialities and weaknesses, as well as methodological guidelines for education in rhythm and time perception, exercises for each part of the lesson, and rhythmic games to guide teaching.

The diagnostic relied on the dependent variable dance steps which produced four indicators that guide the creation of the instruments used to collect valid and reliable information.

1. Training of teachers who implement the teaching and learning of dance steps in elementary school children.
2. Guided initiation of the teaching of the basic elements of rhythmic gymnastics program in this category, depending on the types of training that encourage multilateral development of physical capacities and sports skills in addition to artistic education.
3. Indicators used for the evaluation of dance steps or the control of the artistic component.
4. Ways used to achieve and follow up the artistic component with specific teaching-learning activities linked to dance steps as part of the rhythmic gymnastics lesson (Table 1).



**Table 1-** Results of the teacher survey (n=9) (Diagnostic)

Indicators		Results		
<b>1</b>	Yes -	No 7-77.7% (VS)	Some 4-44.4%(NS)	
<b>2</b>	Technical training Yes- 2- 22.2% (NS) No. Sometimes-7- 77.7% (LS)	Physical training Yes Yes- 7- 77.7% (S) Sometimes-7- 22.2% (NS)	Psychological Technical Yes No- 9-100% (VS) Sometimes-	Theoretical training Yes- 2-22.2% (NS) No- 3-33.3% (NS) Sometimes-4 44.4%(LS)
<b>3</b>	Yes 4 – 44.4%(NS).	No. 1---11.1%(NS).	A little 6- 66.6% (VS)	
<b>4</b>	No courses received 5---55.5%(LS).	Postgraduate courses received 3-33.3% (NS)		

Results of observations made of lessons (15), distributed in the two sports areas in the municipality, to check teaching. Teachers used claps and counts in 100% of the lessons. Rhythmic games were observed in different parts of the lessons, in which 86.6 % (13) of music was used, favoring teacher work and gymnast engagement. The theoretical activities were performed in 95 % of the lessons observed.

The survey confirmed the validity of the information collected through observation, showing unstable work during the 2013-2016 Olympic cycle and until 2019. The results showed poor knowledge by the teachers in this category about general aspects of the execution of dance steps and the absence of robust quality sports results during the process. The flaws in teaching-learning are related to the fact that there is no qualified technical force, and such limitations have affected the stability of the historical results of rhythmic gymnastics in the province in the national context during that cycle.

Methodological triangulation of information of data collected from observation and interviews showed the following shortcomings (Table 2).



**Table 2.** - Methodological triangulation of information

Methods	Indicators of methodological triangulation
used	In PIPD Coaches' knowledge Activities, games, and exercises used in lessons
Documentary analysis	Few directions and aids in the program to work on music-movement.
Observations	Absence of games and methods to be used in the lessons Little utilization of general musical activities. Lack of music during the lessons. Absence of theoretical activities in that sense. Utilization of claps in some cases to perform the exercise.
Interviews	Little knowledge of mathematics, and difficulties in theoretical and methodological training. Teachers are unaware of PIPD guidelines.

Data triangulation of precedent studies, theories, methods, and so forth, showed the absence of proper knowledge for implementation of PIPD directions associated with the teaching and learning of dance steps in rhythmic gymnastics. Hence, the empirical search corroborated the need for teacher training to conduct this process through new variants and procedures. There is a need for new methodologies that contribute to music inclusion, exercises, and rhythmic games in the lessons to optimize the process.

Upon group and individual characterization of gymnasts, teachers should be able to work on their lessons, according to their weaknesses and strengths, based on the general and specific, methodological guidelines, rhythmic games, and the exercises suggested for every part of the lesson.

The educational actions designed are stated below:

- Application of specific methodological guidelines for the basic elements of dance steps derived from the music-movement relation.
- Selection and application of exercises and rhythmic games in every stage of the lesson, according to the objectives.



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- Methodological guidelines for teaching the dance steps in the elementary school children's category.
  - Teaching several rhythms through body movements for further inclusion in individual exercises.
  - Starting with strong rhythms, then softer ones, and their combination, using silence as an important part of rhythmic patterns.
  - Interpreting the exercises following their rhythm with claps and music beat.
  - Using various musical patterns considering the gymnasts' particularities.
  - Using paired exercises with gymnasts having different rhythmic preferences.
  - Working on the final or initial part of different lessons using various rhythmic games.
  - Observing gymnast synchrony placing different rhythms in the lessons.
  - Teaching the traditional dance steps with counting and proper rhythm, using claps or musical objects.
  - Teaching associated motor actions linked by the duration, speed, time, and rhythm of each body movement.
  - Counting the execution of certain exercises performed by gymnasts silently or loudly.
  - Indicating exercises at different speeds and directions, starting with the spontaneous exercises.
  - Representing a move duration in the mind without physical execution individually or in a group of gymnasts.



**Table 3. - Results of the dependent variable behavior**

Dimensions	Pre-test				Post-test			
	Very Good	Good	Average	Bad	Very Good	Good	Average	Bad
	5%	4%	3%	2%	5%	4%	3%	2%
<b>Rhythmic movement</b>	-	-	7-30	17- 70	8- 33	13- 54	3- 13	-
<b>Spatial design</b>	-	-	4- 17	20- 83	13- 54	8- 33	3- 13	-
<b>Improvisation</b>	-	5- 20	5- 20	14- 60	17- 70	4- 14	3- 13	-

As shown in the table, the results of the post-test are quantitatively and qualitatively higher than the results in the pre-test regarding spatial design, with 54% in the Very Good category, which includes the outcomes from the training course. The teachers ran the established tests to determine the gymnasts' rhythmic limitations and potentialities. Then the teachers introduced the methodological guidelines, specific activities for rhythm education, and lessons (Table 3).

The dimension rhythmic movements showed higher values, Good. Concerning other rhythms, there are still shortcomings.

The dimension improvisation was 70 %, expressing the capacity of imagining, thinking, transforming, and encouraging. It allows gymnasts to create experiences during their activity, as aspects that develop the coordinating capacity.

Overall, upon finishing the post-test, the educative actions helped enhance the methodological preparedness of teachers to deal with the teaching and learning of dance steps of rhythmic gymnastics in elementary school children. It enabled cognitive development through the dimensions suggested, focusing on perception, spontaneous development, and musical comprehension seeking more fluent execution of gymnastics moves.





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## CONCLUSIONS

The study of different theoretical rationales and the determination of dimensions of rhythmic movement, spatial movement, and improvisation were useful in designing a teaching-learning method of rhythmic gymnastics dance steps in the elementary school children category. It comprises methodological guidelines, exercises, activities, and rhythmic games, which complement PIPD directions for teacher support.

The actual expertise of teachers working on the dance steps of rhythmic gymnastics U-13 category in the municipality of Holguin shows qualitative and quantitative methodological flaws and shortcomings that affect education and hinder satisfactory outcomes.

The educative actions and methodological guidelines designed and implemented expanded the teacher's scope related to rhythmic gymnastics teaching, with satisfactory results in the area of dance steps.

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The authors declare having no competing interests.

***Author contribution statement:***

The authors have participated in the redaction of the manuscript and the documentary review.



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