

CHALLENGES AND OPPORTUNITIES IN OPTIMIZING PHYSICAL TRAINING: IMPACT ON COMPETITIVE PERFORMANCES IN DANCE SPORT

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Abstract: *These instructions are formulated for presenting the template used for editing the articles for the scientific journal Bulletin of Transilvania University of Braşov. The material presents the camera ready form of the articles. The abstract should synthetically outline all the pertinent results, in a short but intelligible form. The abstract should begin through clearly stating the purpose of the paper and should end by formulating the most important conclusions. There will be used short, direct and complete sentences, written in a single paragraph, without "tab"-s. The abstract will have 7...10 lin The arbitration criteria in sport dance, established by the WDSF and FRDS regulations, form the basis for the activities that referees undertake to assess the technical, artistic, and sports performance quality of dance couples. The research aims to analyze the results of 16 Romanian dancers (aged 15-18) in official competitions, specifically the finalist couples of the National Section Championship, Youth Latin – 2022. This includes their participation and results at DanceMasters, Bucharest 2022 – WDSF Open Youth Latin, WDSF World Championship – 2022, WDSF European Championship – 2022 (for the two couples representing Romania), and the National Section Championship, Youth Latin – 2023, considering their placement in the competition, performance in the rumba dance, and the scores awarded by each judge in the competition jury. Using IBM SPSS Statistics 20, we compared the results recorded from one competition to another throughout a competitive year, specifically between National Section Championships. The analysis highlights the importance of close collaboration between physical preparation and athletes' performance. The obtained results demonstrate the validity of the working hypothesis that the dynamics of performances in national and international competitions can effectively influence the physical training efficiency of sports dancers.*

Key Words: *dancesport, competition, physical training.*

INTRODUCTION

Dancesport is the competitive form of social dance, and even though it has more practitioners worldwide than ballet and modern dance combined, there are fewer studies and research published in this direction.

Dancesport is a sport in constant change and evolution, meaning that the evaluation system consistently adapts to the requirements. It undergoes changes and improvements with the aim of achieving impartial and objective judging.[6] Since the early days of this complex sport, dance couples have been evaluated based on certain criteria. However, with the development of dance styles, their form and variety have undergone modifications. The most crucial criterion, remaining unchanged to this day, is that the ranking is determined through direct comparison of couples (direct and comparative analysis of sports and artistic performances) [4].

The judging of the technical parts of performance was shown to be more reliable than the artistic parts, which could be a result of more detailed criteria for the technical parts. [5]

Vermey and Brandt [7] suggested that judges rely on their knowledge and ability to recognize artistic qualities, allowing them to ascribe value to a performance.

The competitive nature of dancesport emerges from the direct confrontation on the dance floor between sports dance couples, aiming to achieve the best possible results and positions in the ranking [2]. The judging criteria, established by the WDSF (World DanceSport Federation) and FRDS (Romanian DanceSport Federation) regulations, form the basis of the activities that judges undertake to assess the technical, artistic, and sports performance quality of dance couples. Judges are not obligated to apply all evaluation criteria at any given moment during the competition, as these criteria vary depending on the competition stage (qualification round, quarterfinals, semifinals, or finals).

In the preliminary rounds of the competition, elements related to the basic requirements of executing dance elements are observed:

- Correct posture during dance
- Basic technical skills
- Full synchronization with the musical support
- Accuracy in executing dance figures

As the competition progresses, more complex criteria are applied, such as:

- Accuracy of execution from both technical and artistic perspectives
- Execution dynamics
- Highlighting the character of each dance style
- Partnership elements

In the later stages of the competition (semifinals and finals), judges focus on elements that make a difference between couples. They pay attention to aspects that add a special value to sports performances, elements that bring spectacularity, originality, and qualitative differentiation.

Understanding the intricacies of DanceSport as an artful sport, as highlighted by Brownlow et al. [3], allows us to address, to some degree, the challenges related to judging and evaluation. This involves considering the impartiality of preferences and navigating the dynamics between art and sport. A thriving dance performance necessitates the dancers' adept connection to various elements, including themselves, the dance floor, music, partner, other couples, and the audience, as emphasized by Bayraktar [1]. Recognizing the significance of imagination, originality, and ingenuity further underscores the vital components of a successful dance presentation.

One of the significant challenges in training ballroom dancers is maintaining constant progress and avoiding stagnation in their development. Coaches and instructors must be creative and adapt strategies to ensure that dancers continuously enhance their skills and performances. Utilizing artistic training methods to increase the strength of the lower limbs can lead to performance improvement by refining execution techniques and physical form.

OBJECTIVES

With the aim of optimizing physical training, dance techniques, and adapting strategies to improve performances in the Rumba Walk based on the specifics of each dancer, I have set the research objective to investigate the impact of the evolution of statistical indicators on the performances of sports dancers in Rumba Walk. This investigation is based on data collected in competitions C1 – C6.

MATERIAL AND METHODS

The hypothesis from which the study originated is that the dynamics of statistical indicators regarding the classification of athletes in national and international competitions can determine the efficiency of the physical training of ballroom dancers. In our research, we started with the observational study of the investigated results, collected from the website of the Romanian DanceSport Federation [8], and from the website of the World DanceSport Federation [9].

The data collected during the research were statistically processed using the IBM SPSS Statistics 20 program. Our experimental approach unfolded by involving 16 subjects (8 girls and 8 boys) with ages ranging from 15 to 18 years old. These individuals represented the couples ranked 1-7 in the National Dancesport Championships, by sections, as well as in the International Dancesport Championships, editions 2022 and 2023.

The information is related to the results obtained in the Latin American dances section, youth age category, at international competitions:

1. C1 - DanceMasters, Bucharest 2022 – WDSF Open Youth Latin;
2. C2 - German Open Championship Stuttgart 2022;
3. C3 - WDSF Open Youth Latin, Transylvanian Grand Prix, Sibiu 2022;
4. C4 - WDSF Open Youth Latin, Grand Gala Romanian International Dance Cup, Timisoara 2022;
5. C5 - WDSF Open Youth Latin, National Sections Championship, youth Latin – 2022;
6. C6 - National Sections Championship, youth Latin – 2023.

We evaluated the evolution of 16 athletes (8 couples) representing our country in the specified competitions. The analysis of the results of the 8 couples was conducted from one competition to another throughout a competition year, specifically between the National Section Championships.

RESULTS AND DISCUSSIONS

Following the analysis of the statistical indicators' results of the overall ranking

presented graphically (fig no. 1) and Rumba Walk (C1, C2, C3, C4, C5, C6) presented in table 1, it can be concluded that the statistical significance of the difference between means is expressed by t-values ranging from 0.274 to 1.246 at the significance level of $p=0.05$.

Based on the values presented in Table 1, the asymmetry coefficient (β_1) for the initial test has values indicating a notable asymmetry. For the final test, the asymmetry coefficient (β_2) has values indicating a pronounced asymmetry, as we have $\pm 0.5 < \beta_2 < \pm 3$. The dispersion of values - $M1 \pm SD1$ - for the initial test shows a normal spread of values, and - $M2 \pm SD2$ - for the final test also shows a normal spread of values. The values of 35.42 and 44.77 for the variation coefficient (CV1) for the initial test and (CV2) for the final test demonstrate that there is a heterogeneous population of values.

The asymmetry coefficient (for the comparison between C2 and C3) for the initial test has values indicating a pronounced asymmetry, as we have $\pm 0.5 < \beta_2 < \pm 3$, while for the final test, the asymmetry coefficient has values indicating a normal asymmetry. The dispersion of values - $M1 \pm SD1$ - for the initial test shows a normal spread of values, and - $M2 \pm SD2$ - for the final test also shows a normal spread of values. The values of 44.776 and 72.338 for the variation coefficient (CV1) for the initial test and (CV2) for the final test demonstrate that there is a heterogeneous population of values.

For comparison between C3 and C4 we found that the dispersion of values - $M1 \pm SD1$ - for the initial test indicates a normal spread of values, and - $M2 \pm SD2$ - for the final test also shows a normal spread of values. The values of 72.338 and 51.951 for the coefficient of variation (CV1) for the initial test and (CV2) for the final test demonstrate that there is a heterogeneous population of values.

The dispersion of values - $M1 \pm SD1$ - for the initial test (C4) indicates a normal spread of values, and - $M2 \pm SD2$ - for the final test (C5) also shows a normal spread of values. The values of 51.951 and 65.796 for the coefficient of variation (CV1) for the initial test and (CV2) for the final test demonstrate that there is a heterogeneous population of values. The dispersion of values - $M1 \pm SD1$ - for the initial test (C5) indicates a normal spread of values, and - $M2 \pm SD2$ - for the final test (C6) also shows a normal spread of values. The values of 65.796 and 64.343 for the coefficient of variation (CV1) for the initial test and (CV2) for the final test demonstrate that there is a heterogeneous population of values. The dispersion of values - $M1 \pm SD1$ - for the initial test (C1) indicates a normal spread of values, and - $M2 \pm SD2$ - for the final test (C6) also shows a normal spread of values. The values of 35.426 and 64.343 for the coefficient of variation (CV1) for the initial test and (CV2) for the final test demonstrate that there is a heterogeneous population of values.



Fig. 1. The overall results for C1 – C6

The statistical indicators of the Rumba Walk's evolution Table 1

Competitions		M ± DS	CV%	T test	p
C1- C2	IT	4,875±1,72	35,42	2,341	p<0.025
	FT	8,25±3,69	44,77		
C2- C3	IT	8,25±0,73	44,77	1,351	p>0.05
	FT	5,625±0,59	72,33		
C3- C4	IT	5,625±4,06	72,33	0,274	p>0.05
	FT	6,125±3,18	51,95		
C4- C5	IT	6,125±3,18	51,95	0,29	p>0.05
	FT	5,625±3,70	65,79		
C5- C6	IT	5,625±3,70	65,79	0,667	p>0.05
	FT	7±4,50	64,34		
C1- C6	IT	4,875±1,72	35,42	1,246	p>0.05
	FT	7±4,50	64,34		

CONCLUSIONS

Ballroom dancing is a discipline that involves both technique and intensive physical preparation. To achieve top performances, sports dancers must develop their technical skills and maintain enviable physical fitness. In this context, the dynamics of statistical indicators, such as the classification of athletes in national and international competitions, can play a crucial role in optimizing their physical preparation.

The classification of athletes in national and international competitions is an essential component of the high-performance sports universe. This classification is

based on results obtained in various competitions and is accompanied by a series of statistical indicators, such as scores, rankings, and the evolution of performances over time.

Physical preparation is a fundamental element in ballroom dancing. Dancers need to have good cardiovascular endurance, muscular strength, flexibility, and coordination. Without these physical qualities, athletes will not achieve superior classifications, and the risk of injuries may increase significantly. The dynamics of statistical indicators regarding the classification of athletes in national and international competitions play a significant role in optimizing the physical preparation of sports dancers. These indicators can motivate, guide, and enhance the physical training process for dancers, contributing to peak performances in ballroom dancing.

It is important for dancers and coaches to understand the value of these statistical indicators and use them intelligently to achieve their goals and continue to evolve in such a demanding discipline as ballroom dancing. The analysis of statistical indicators obtained from the classification of athletes involved in this research emphasizes the importance of a close collaboration between physical preparation and athlete performance, confirming the hypothesis.

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