

EVOLUTION OF COMPETITIVE AEROBICS MOVEMENTS BASED ON AESTHETICS



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EVOLUÇÃO DOS MOVIMENTOS DA AERÓBICA COMPETITIVA BASEADA NA ESTÉTICA

EVOLUCIÓN DE LOS MOVIMIENTOS AERÓBICOS DE COMPETICIÓN BASADA EN LA ESTÉTICA

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ABSTRACT

Introduction: Competitive aerobics is used mainly in the physical education of students in school period. In detriment of the physical value, the aesthetic factor is often neglected, and the analysis of the evolution of its movements can favor the development of this factor. **Objective:** Explore the evolution of competition aerobics movements based on the aesthetics of the movements. **Methods:** First, this paper discusses the scoring rules of competition aerobics over the years, using methods from the literature and image data. Next, athletes and coaches were asked to fill out and rate the weight score to analyze the value and scoring rules of competitive aerobics. **Results:** Aerobics in the competitive world has become increasingly mature, and the scoring rules have been more detailed and targeted. The most basic skills such as movement, strength, aesthetics, and more are the ongoing focus of scoring and specific training. **Conclusion:** Coaches and athletes must combine the evolution of current competitive aerobic movements, establishing a good foundation with precautions in synergy with the strengthening combination of basic training and scientific research. These are essential features for athletes to gain more scoring advantages in the competitive environment to improve their results in aerobic competitions. **Level of evidence II; Therapeutic studies - investigation of treatment outcomes.**

Keywords: Physical Education and Training; Exercise Movement Techniques; Students.

RESUMO

Introdução: A aeróbica de competição é utilizada principalmente na educação física dos alunos em período escolar. Em detrimento do valor físico, o fator estético muitas vezes é negligenciado, e a análise da evolução de seus movimentos pode favorecer o desenvolvimento desse fator. **Objetivo:** Explorar a evolução dos movimentos da aeróbica de competição com base na estética dos movimentos. **Métodos:** Primeiramente, este artigo discute as regras de pontuação da aeróbica de competição ao longo dos anos, utilizando os métodos da literatura e dados de imagem. Em seguida, atletas e treinadores foram convidados para preencher e classificar o peso da pontuação, a fim de analisar o valor e as regras de pontuação da aeróbica competitiva. **Resultados:** A aeróbica no mundo competitivo tornou-se cada vez mais madura, e as regras de pontuação têm sido mais detalhadas e direcionadas. As habilidades mais básicas como movimentos, força, estética, entre outras, são o foco contínuo da pontuação e do treinamento específico. **Conclusão:** Treinadores e atletas devem combinar a evolução dos movimentos aeróbicos competitivos atuais, estabelecendo uma boa base com precauções em sinergia ao fortalecimento da combinação de treinamento básico e pesquisa científica. Essas são características essenciais para que os atletas possam obter mais vantagens de pontuação no meio competitivo, a fim de melhorar seus resultados nas competições de aeróbica. **Nível de evidência II; Estudos terapêuticos - investigação dos resultados do tratamento.**

Descritores: Educação Física e Treinamento; Técnicas de Exercício e de Movimento; Estudantes.

RESUMEN

Introducción: El aeróbic de competición se utiliza principalmente en la educación física de los alumnos en periodo escolar. En detrimento del valor físico, muchas veces se descuida el factor estético, y el análisis de la evolución de sus movimientos puede favorecer el desarrollo de este factor. **Objetivo:** Explorar la evolución de los movimientos del aeróbic de competición a partir de la estética de los movimientos. **Métodos:** En primer lugar, este artículo analiza las reglas de puntuación del aeróbic de competición a lo largo de los años, utilizando métodos bibliográficos y datos de imágenes. A continuación, se invitó a atletas y entrenadores a rellenar y puntuar el peso para analizar el valor y las reglas de puntuación del aeróbic de competición. **Resultados:** El aeróbic de competición ha madurado cada vez más, y las reglas de puntuación se han hecho más detalladas y específicas. Las habilidades más básicas como el movimiento, la fuerza, la estética, entre otras, son el foco continuo de la puntuación y del entrenamiento específico. **Conclusión:** Los entrenadores y los atletas deben combinar la evolución de los movimientos aeróbicos competitivos actuales, estableciendo una buena base con precauciones en sinergia con el fortalecimiento de la combinación del entrenamiento básico y la investigación científica. Estas son características esenciales para que los atletas obtengan más ventajas de puntuación en el ambiente competitivo para mejorar sus resultados en las competiciones aeróbicas. **Nivel de evidencia II; Estudios terapéuticos - investigación de los resultados del tratamiento.**

Descriptor: Educación y Entrenamiento Físico; Técnicas de Ejercicio con Movimientos; Estudiantes.



INTRODUCTION

Competitive aerobics is the combination of strength and beauty. In emotional music, through the display of body strength and the combination of rhythm, it shows the vitality and passion of athletes and the charm of life.¹ Therefore, competitive aerobics has both good competitive effect and excellent visual experience. Because of the characteristics of both strength and beauty, this strength aesthetics also makes competitive aerobics a bright spot in the sports field.² In 1994, competitive aerobics was included in the affiliated project of the International Gymnastics Federation, and then started the international development, making competitive aerobics from a simple physical fitness to a hot competitive project. In the evolution of many years, with the progress of technology and the needs of competition, the movement of competitive aerobics has also produced a lot of evolution.³ Its evaluation structure is more reasonable and the score is more detailed, so that the movement of Competitive Aerobics continues to evolve on the basis of strength aesthetics.⁴ As a strong gymnastics country, China has also made a lot of research on competitive aerobics, but the current analysis of competitive aerobics is not in place, and mostly stays in the mass teaching of aerobics.⁵ Competitive aerobics is mostly used in the aesthetic education and physical education of school students, and the analysis of its movement evolution is not in place. Therefore, there are still many problems in the research on the evolution of competitive aerobics.⁶ In view of this situation, this paper starts from the most important strength aesthetics of competitive aerobics, combined with the evolution of the current scoring rules, discusses the movement evolution of Competitive Aerobics over the years, and puts forward the corresponding development countermeasures.

METHOD

Literature and image data research method

To explore the evolution of Competitive Aerobics movements over the years, we should start with relevant data. This paper discusses the relevant data since the origin of competitive aerobics, sorts out and analyzes the development of Competitive Aerobics over the years, and records and sorts out the display of strength aesthetics and the evolution of scoring in competitive aerobics. First of all, it analyzes the scoring rules of the evolution of Competitive Aerobics operation from the aspect of literature. Then, this paper consults the video of competitive aerobics competition and the scoring of referees for many years, and analyzes the movement change of Competitive Aerobics more intuitively and dynamically from the perspective of image data, so as to combine the literature and image data, and discuss the evolution of strength aesthetics of Competitive Aerobics more stereoscopically, so as to make the research more detailed. The study and all the participants were reviewed and approved by Ethics Committee of Xi'an FanYi University (XAFYU2021-FD08).

Interview method

The most direct manifestation of the evolution of competitive aerobics is the emphasis and training strategies of athletes and coaches. Therefore, in addition to the analysis of images and literature, this paper also uses the form of interview to interview the active Aerobics athletes, retired Aerobics athletes, and aerobics coaches who have experienced the evolution of Aerobics scores for many rounds, and to interview their competitive aerobics teaching effects, teaching methods, aerobics practice experiences, competition focus, etc. The opponent was invited to fill in various scoring weights during the competition. After obtaining the permission of the other party, the data shall be sorted out and taken as an important basis for the article research.

RESULTS

Weight analysis of Competitive Aerobics action score based on strength Aesthetics

The research result of this section is that the author invites the current and retired gymnasts and coaches to score in the form of interview, and fills in the scoring weight they think in gymnastics preparation. From the table, we can see the proportion of strength aesthetics in the score of competitive gymnastics. Table 1 shows the formal beauty of power aesthetics, with a weight of 0.31356; Table 2 shows the technical beauty of power aesthetics, with a weight of 0.36078; Table 3 shows the spatial beauty of power aesthetics, with a weight of 0.32566.

Table 1 shows the scoring weight of formal beauty in the scoring of competitive aerobics, of which the music beauty ranks first with a weight of 0.36954; The second is body beauty, with a weight of 0.33813; The third is clothing beauty, with a weight of 0.29234. The top three weights of music beauty and China are musical sense, music selection and arrangement, and music structure. The weights are 0.35852, 0.32822, and 0.31325 respectively. The top three weights of clothing beauty and China are color, style and pattern, with the weights of 0.26166, 0.25326 and 0.24861 respectively. The weight of body beauty and posture beauty ranks first with 0.34825, and the top three are smooth lines, proportion of limbs and equal muscles, with 0.26196, 0.26091 and 0.24513 respectively; The weight of quality beauty ranked second with 0.33433, and the first three positions of the weight were trunk posture, arm posture and leg posture, with the weights of 0.26416, 0.25283 and 0.24464 respectively; The weight of body beauty ranked the third with 0.31742, and the top three weights were strength, flexibility and speed, with 0.21236, 0.20131 and 0.19912 respectively.

Table 2 shows the scoring weights of technical beauty in the scoring of Competitive Aerobics movements. Among them, the difficulty technique ranks first with a weight of 0.26398; The second is operation technology, with a weight of 0.25610; The third is the main content, with a weight of 0.24568; The fourth is the lift, with a weight of 0.23423. Among the difficulty techniques, the top three weights are jump and jump, balance and flexibility, and dynamic strength, with the weights

Table 1. Scoring weight of Competitive Aerobics - beauty of form.

First -level indicator	Second -level indicator	Third -level indicator	Weight	Fourth-level indicator	Weight
A Form beauty 0.31356	A1 Body beauty 0.33813	Physical beauty	0.31742	Smooth line	0.26196
				Equal muscle	0.24513
				Body ratio	0.23200
				Proportion of limbs	0.26091
	Posture beauty	0.34825	Trunk posture	0.26416	
			Arms	0.25283	
			Legs	0.24464	
			Head position	0.23837	
	Quality beauty	0.33433	strength	0.21236	
			Flexible	0.20131	
			speed	0.19912	
			endurance	0.19338	
			Sensitive	0.19383	
	A2 Dress beauty 0.29234	Color	0.26166		
		Pattern	0.24861		
Shape		0.25326			
Material		0.23646			
A3 Musical beauty 0.36954	Musicality	0.35852			
	Music structure	0.31325			
	Selection	0.32822			

Table 2. Scoring weight of competitive aerobics movement - Technical Beauty.

First -level indicator	Second -level indicator	Third -level indicator	Weight
B Technical beauty 0.36078	B1 Difficulty technique 0.26398	Jump and leap movement	0.26569
		Balance and flexible action	0.25549
		Powerful power action	0.25172
		Static power action	0.22710
	B2 Operation technology 0.25610	Seven basic footwork and changes	0.26278
		Complexity/diversity arm arm	0.25752
		Number of fucking units	0.24836
		Completely fucking unit	0.23134
	B3 Main content 0.24568	Transition and connection action	0.35500
		Technique	0.33312
		Companion cooperation	0.31189
	B4 Lift 0.23423	Physical ability	0.26383
		Change of axis	0.25054
Skill		0.24667	
Throw		0.23896	

of 0.26569, 0.25549, and 0.25172 respectively; The top three weights in the manipulation technology are seven basic steps and changes, complexity / diversity arms, and the number of manipulation units. The weights are 0.26278, 0.25752, and 0.24836 in turn; The top three weights in the main content are transition and connection movement skills and partner cooperation, and the weights are 0.35500, 0.33312 and 0.31189 respectively; The top three weights in the lift are body ability, axis change and skill, and the weights are 0.26383, 0.25054 and 0.24667 respectively.

Table 3 shows the scoring weight of space beauty in the scoring of competitive aerobics, of which the first is space utilization, with a weight of 0.53619; The second is the plane area, with a weight of 0.46381. The top three weights in space utilization are flying action, standing action and ground action, and the weights are 0.35524, 0.32280 and 0.32196 respectively. The top three weights in the plane area are formation change frequency, regular formation change and irregular formation change, and the weights are 0.34999, 0.33529 and 0.31472 respectively.

A comprehensive comparison of Table 1, table 2 and table 3 shows that technology still ranks first in the scoring weight of competitive aerobics, but the gap between them is small. Comparatively speaking, the collocation of music, the design of technology, the change of formation and the use of space are the key points of Aerobics competitive scoring. Therefore, in the process of training, athletes and coaches have consciously strengthened the training in these aspects, and show it in the final competition, so as to increase the focus of scoring and improve the performance of competitive scoring.

Evolution analysis of Competitive Aerobics action score

This section discusses the changes of scoring rules over the years obtained from the literature research. From the changes of scoring criteria, we can find the law of current competitive aerobics movement evolution, and can also be used as the indicator of future movement evolution, as shown in Table 4 and table 5.

Table 4 shows the scoring rules of artistic scores of Competitive Aerobics from 2013 to 2016. It can be seen from the table that among the 10 art scores, the action design composite score is 4, ranking first; The second is the selection of music and the design of a series of actions. The scores are all 3 points, ranking second. In the 4-point "action design synthesis" option, fluency and movement account for 1 point, complexity for 1 point, innovation and diversity for 1 point, and the effectiveness of the combination with the environment and space for 1 point. In the

3-point "series action design" option, the innovation and diversity of actions account for 1 point, the complexity of actions accounts for 1 point, and the coherence and fluency of actions account for 1 point. In the 3-point "music selection" option, music editing accounts for 1 point, music interpretation accounts for 1 point, and music application accounts for 1 point.

A comprehensive comparison of the results in Table 4 and table 5 shows that, with the evolution of time, on the premise that the number of scoring details of Competitive Aerobics remains unchanged, the scope involved is broader and more detailed. Table 4 shows only three large options, each of which includes 3~4 small options. Table 5 shows five large options, each of which includes two small options. In this way, although the number of small options has been reduced, the overall division is more scientific and more combined with the competitive aesthetics of aerobics. Therefore, the movement score of competitive aerobics is a progressive trend, which also promotes the evolution of aerobics movement.

DISCUSSION

By comparing the evolution rules of Aerobics movements, it can be seen that although the detailed rules for artistic scoring of Competitive Aerobics have changed over the years, on the whole, they have never changed. Strength aesthetics, display of technology, utilization of space, etc. are always the focus of scoring. It can also be said that as long as we master the basic principles of aerobics, we don't care about the adjustment of specific scoring rules. Therefore, relevant coaches and athletes should always pay attention to the strengthening of the foundation,

Table 3. Scoring weight of competitive aerobics movement - beauty of space.

First -level indicator	Second -level indicator	Third -level indicator	Weight
C beauty of space 0.32566	C1 Space utilization 0.53619	Empty action	0.35524
		Ground movement	0.32196
		Standing action	0.32280
	C2 Plane area 0.46381	Frequency frequency of formation	0.34999
		Rules and formation changes	0.33529
		Irregular formation changes	0.31472

Table 4. Scoring rules for artistic scores of Competitive Aerobics in 2013-2016 cycle.

Series action design (3 points)	Action design synthesis (4 points)	Music selection (3 points)
Innovation and diversity of action (1 point)	Fluency and dynamics (1 point)	Edit (1 point)
The complexity of action (1 point)	Complex (1 point)	Express (1 point)
The coherence and fluency of action (1 point)	Innovation and diversity (1 point)	Application (1 point)
	Effectiveness combined with environmental space (1 point)	

Table 5. Scoring rules for Competitive Aerobics in 2017-2020 cycle.

Artistic (maximum 2 points)	Fucking action (up to 2 points)	Music and music (maximum 2 points)	The main content (up to 2 points)	Space application (up to 2 points)
Art Tension/Performance Quality	Complexity of action	Music selection and editor	Complexity/diversity	Use of the competition area
Creativity	The proportion of complex actions	Application and interpretation of music	Fluid	Effectiveness with environmental space

including the strengthening of sports skills, the improvement of artistic standards, etc., and firmly grasp the key points of basic scores, so as to remain invincible in the change of rules. In addition, athletes and coaches should be flexible. In case of adjustment of rules, they should make timely response strategies, readjust and combine the existing basic skills, and adapt to the changes of rules as soon as possible.

The previous description mentioned the key point of strengthening the foundation, that is, no matter how the scoring rules change, we should always grasp the same key points to strengthen the foundation and make ourselves invincible. In addition, the focus of training should be adjusted according to the changes of scoring criteria. Athletes and coaches should always grasp the development direction and trend of international competitive aerobics, and actively apply the adjustment of existing scoring points to increase the possibility of scoring. For example, by comparing Table 4 and table 5 above, it can be seen that the use of space has increased from 1 point in Table 4 to 2 points in Table 5, which requires athletes to strengthen the focus on the use of space on the premise of a solid foundation, better adjust the changes of formation and movement, and better combine the movement with the environment, so as to strive for the deviation of relevant scores and improve the sports scores. For some athletes with good basic skills and high competitive level, in order to gain the advantage in score in the

fierce competition, in addition to passively waiting for the change of scoring criteria, coaches should also fully study and study the changing trend of current competitive aerobics, discuss with athletes pertinently, make certain predictions of future results, and conduct training, so as to continuously strengthen the combination of scientific research level and training ability, Get a dominant position in the aerobics field.

CONCLUSION

From the research of this paper, we can see that the current aerobics movement evolution shows a parallel development trend of artistry and technology, and the proportion of artistry is increasing, which also puts forward higher requirements for the teaching of competitive aerobics. Coaches and athletes should always give attention to strength aesthetics and technical training, fully grasp the scoring characteristics of competitive aerobics, and focus on training in combination with the current scoring rules on the premise of a solid foundation, so as to strengthen the scoring probability of competitive aerobics competition, gain score advantage on the field, and improve the competitive level of athletes and the hope of winning the competition.

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REFERENCES

1. Analysis and evolution of the difficulty parameters of Aerobics. In: Gonzales Valero Ma, Sanchez Molina Jaarez Gayo (ed). The Fourth Congress of the Spanish Sports Science Association. University of Coruna: Coruna; 2006.
2. Aerobics: characteristics, evolution, management and standardization of scoring rules. The second international gymnastics jazz and aerobics day. Malaga: Andalusian Institute of physical education; 1998.
3. Vernetta M, Gutiérrez A, López Bedoya J, Navarro E. analysis and evolution of the concept of difficulty in the current rules of Competitive Aerobics (2001-2004). In: I watched the sports Symposium. Barcelona International Football Club; 2001.
4. López J, Vernetta M, De la Cruz JC. Características morfológicas y funcionales del Aerobic Deportivo. *Apunt Educ Fis y Deportes*. 1999;55:60-5.
5. Torrents C, Peralta M, Marina M, Balague N. Evaluation of gymnasts and aerobics coaches on low-intensity training in long jump and high-intensity training in pushups. In: 4art Congres de les Ciències de l'Esport, l'Educació Physical ii recreated de'inefc de lleida: Inefc; 1999.
6. Çetin S, Ece C, Şen M, Çetin HN, Aydoğan A. The Effects of Pilates and Aerobic Exercise on Blood Pressure, Heart Rates, and Blood Serum Lipids in Sedentary Females. *J Educ Train Stud*. 2019;7(4):229-35.