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REVIEW ARTICLE

Music, rhythmic gymnastics and expressiveness: an artistic performance

Short title: Music, rhythmic gymnastics and expressiveness

Maria Gabriel Morgado[1], Maria Beatriz Licursi[2], Levi Leonido Fernandes da Silva[3*],

[1] Centro de Estudos Filosóficos e Humanísticos da Universidade Católica
[2] Universidade Federal do Rio de Janeiro
[3] Universidade de Trás-os-Montes e Alto Douro, Vila Real

Corresponding Author: Quinta de Prados, 5000-801 Vila Real, Portugal

*** E-mail:** levileon@utad.pt

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ABSTRACT

In rhythmic gymnastics, we appreciate the brilliant success in a true performing art whose sensitively expressive movements of great technical skill integrated into the music result in an exquisite and refined performance that involves body plasticity, musical receptivity, feelings and emotions. The practice of gymnastics significantly contributes to the development of body movements and musicality, boosting motor and artistic abilities by the acquisition of improved skills for jumping, running and practising different exercises. This study aimed to investigate how music is important in the development of rhythmic gymnastics. A literature review was carried out with research from 2016 to 2021 and published in Google Academic. We emphasise how the body action perfectly integrated into the music is essential for the artistic representation of an enchanting plastic, musical and grandiose beauty. We understand that encouraging physical exercise, especially artistic rhythmic gymnastics, is very important for the development of essential qualities for the individual, such as physical, behavioural, artistic and emotional attributes.

***Keywords*:** Rhythmic Gymnastics, Music, Integration, Artistic Performance.

INTRODUCTION

The analysis of data from anthropometric measurements and medical examinations in recent years has shown a positive change regarding the height of children aged 7 to 18 years. However, physical fitness declines because Physical Education and sports in schools do not provide enough physical activities, which are crucial during the growth and development of young children (Brochado & Brochado, 2017).

Children and teenagers need extra physical activities, through which they practice appropriate physical activity and sports. In this way, the child develops the main qualities that define physical fitness: strength, speed, endurance and flexibility (Fernandez & Alcalá, 2021). The author emphasizes that floor and equipment exercises provide a great diversity of movements, which leads to positive results for the student's physical development (Oliveira, 2017).

Rhythmic Gymnastics (RG) is one of the main sports that involve choreography with selected musical accompaniment. Whose primary purpose of the artistic component is to transfer "emotion and the idea of expression, both translated through the following three aspects: the musical accompaniment, plastic artistic image and expressivity" (Toledo & Antualpa, 2016, p. 126).

Many studies highlight the benefits of this Olympic discipline. The act of following the rhythm of music promotes the individual, in addition to corporeality, the development of the ability to express themselves through their movements. Other similar sporting activities include figure skating, synchronized swimming and martial arts that require a high level of acrobatic techniques but also show creativity and artistic elements. However, among these sports, rhythmic gymnastics is the closest to music due to its origins and historical background (Trevisan, 2016).

Rhythmic Gymnastics was created from the idea of merging music and dance into expressive performance. The idea of RG was initially recognized and considered a sport/discipline in the Soviet Union during the 1940s and its invention came from the idea of three prominent dancers and musicians: Jean-Georges Noverre (1722-1810), François Delsarte (1811-1871) and Rudolf Bode (1881), the latter, a student of Emile Jacques Dalcroze (important musical pedagogue), who believed that dance was a prominent means for the individual to express themselves musically (Leonido, 2005).

In this sense, the characteristics of RG were very specific in relation to other bodily activities (Madureira, 2007, 2008ab, 2020). Rudolf Bode (1881-1971) idealizes Expressive Gymnastics (EG) which later became Modern Gymnastics (GM) and which, finally, would become the RG as we know it, which incorporated certain differentiating characteristics of the other models and bodily practices in its design (Toepfer, 1997). It assumes the possibility of "grouping body exercises, music, dance, expressiveness and later the manipulation of portable objects, it was, in fact, an innovation that went hand in hand with other revolutions in dance, music, arts and in education" (Pereira 2019, p. 37).

This concept links music to Eurythmy (or Dalcroze Method), developed by Dalcroze in the 1880s. In his study and creation of musical pedagogy, he believed that rhythm, physical movement and bodily processes were the three fundamental bases of musical expressiveness (Leonido, 2005, 2007, Leandro, 2018).

RG is a modality and category of sport, linked to music through which the body can (and should) express itself artistically. It includes a group of sports activities that "establish a very close relationship with art, making it an inexhaustible source of creativity, which generates significant aesthetic experiences, as it is indelibly linked to music and the handling of portable devices" (Pereira, 2019, p. 15). In other words, for Pereira (2019, p. 15) the characteristics acquired since its creation "resulted in the promotion of infinite possibilities of

expression of the body. What in the eyes of the common connoisseur can be translated as simple or soft, when it comes to high-performance teams, is the result of bodily transformations resulting from excruciating efforts".

As well pointed out by Trevisan (2016), Pereira (2019), and Carvalho and Silva (2020), we understand that as well as the cadenced execution in RG, music is structured by elements such as rhythm, tempo, dynamics, articulation, expression, phrasing that contribute also for the synchronization of movements in exercise. This particularity in the relationship between music and sport (or physical activity) has been the object of different types of studies. Many researchers investigate how music enhances ergogenic effects among athletes; it usually involves repetitive motion activities such as running, cycling, aerobics, and so on.

Oliveira (2017) asserts that there are investigations about changes in emotion and motivation when music (synchronous or asynchronous) is used during exercises. The use of music in synchronous mode can be limited to the rhythmic-temporal aspects of music used as a kind of metronome that regulates the movement patterns in question. In turn, the use of asynchronous music is commonly used to provide a background simulation without conscious synchronization between movement patterns and the rhythm-musical environment (Oliveira, 2017).

However, Trevisan (2016) states that these facts refer to cyclically repeated exercises and, therefore, the musical accompaniment of sports routines invariably becomes more complex as it may have to add style, character, dynamics, at a time. The musical movement, among others that fit the athlete/performer's choreography. Objectively that choreographic activity is clearly related to dance that supports movement and structured and planned/programmed elements and, once again, music can play a key role in cohesion, connection and artistic context and desired result (Trevisan, 2016). Like repetitive exercises, dance and sports often employ music as an essential component. In the case of dance and GR, the music is perfectly

synchronized with body movements, thus structuring the series to be presented. According to RG trainers it is customary first that the selected song is edited according to the composition of the series of rhythmic sequences of steps and movements. For Oliveira (2017) the quality of congruence when a musical accompaniment is composed based on an existing choreographed routine and not vice versa, as is the conventional method.

It is noteworthy, from personal experience, that previously pianists and gymnasts progressed simultaneously in the development of the performance, as the athlete talent through the movements performed was underlined by the interpretive and creative talent of the musician through musical arrangements composed specifically using pianistic technique resources such as glissandos, staccatos, ornaments, speeds and jumps among others. The pianist, when visualizing the athletic performance, improvised instantly and simultaneously his arrangement fully integrated the musical art and the art of RG, in which varied music was included depending on the choreography.

We carried out bibliographical research in order to investigate how much music is relevant to the structuring and improvement of GR's artistic performance.

METHOD

We decided on the methodological procedure regarding the systematic matrix bibliographic research (Segura-Muñoz et al., 2002; Wrigth et al., 2007; Medina & Pailaquilen, 2010; De-La-Torre-Ugarte-Guanilo, Takahashi, & Bertolozzi, 2011; Thomas, Nelson & Silverman, 2012; Depaepe, Verschaffel, & Kelchtermans, 2013; Gomes & Caminha, 2014). Therefore, we developed a relevant theoretical framework on the central theme of the study. The bibliographical survey used the Google Academic platform through the procedures and phases detailed below.

Participants

Fifty researches were collected, but after inserting the inclusion and exclusion criteria, 15 of them were selected for analysis with a research time horizon from 2016 to 2021, structured in the following sequence: Carvalho and Silva (2020); Craijdan (2018); Gantcheva, Borysova and Kovalenko (2021); Handayani (2020); Leandro (2018); Menegaldo and Bortoleto (2017); Oliveira (2017); Oktariyana (2020); Paz et al. (2018); Pereira et al., (2019); Toledo et al. (2018); Trevisan (2016); Zhou (2021); Zanlorenci et al. (2020); Nakashima et al. (2018).

Table 1. Summary of included studies

Autor	Subject	Type	Year
Carvalho et al.	*Motor performance associated with musical rhythms*	Article	2020
Craijdan	*Technology and coordination abilities in rhythmic gymnastics*	Article	2018
Gantcheva	*Artistic abilities*	Article	2021
Handayani	*Rhythmic Gymnastics to Improve Motor Skills*	Article	2020
Leandro	*Rhythmic gymnastics routines*	Article	2018
Menegaldo	*Rhythmic Gymnastics Teaching*	Article	2017
Oliveira	*Rhythmic Gymnastics Scoring Codes*	Grad. Research	2017
Oktrariycha	*Electronic module teaching materials in rhythmic gymnastics subject*	Article	2020
Paz et al.	*The constitution of a sporting subfield in rhythmic gymnastics*	Article	2018
Pereira	*Expressiveness of gymnastic bodies*	PhD Thesis	2019
Toledo	*The musical attributes of the code of points*	Article	2018
Trevisan	*Motor creativity in sports dance and rhythmic gymnastics*	PhD Thesis	2016
Zhou	*Aesthetic Characteristics of Sports Music and Communication Channels*	Article	2021
Zanlorenci et al.	*Anthropometric indicators in rhythmic gymnastics athletes*	Article	2020
Nakashima et al.	*Parental involvement and sports career development*	Article	2018

Instruments

The descriptors in Portuguese were used: 1. Gymnastics (1476=32/43[1]| 539=9/15[2]); 2. Movement (1553=29/43 | 245=7/15); 3. Body (2365=27/43 | 320=7/15); 4. Music (447=22/43 | 313=8/15). Descriptors in English: 1. Gymnastics (429=31/43 | 301=15/15); 2. Movement

[1] Form of data presentation: (total of identified descriptors = total of documents in which the descriptors are verified / total of verified documents). In this case, 43 (out of 50) searches were verified, since the remaining 7 were previously excluded, as they are not available in full and / or require a subscription for this purpose.
[2] Form of data presentation: (total of identified descriptors = total of documents in which the descriptors are verified / total of verified documents). In this case, 15 researches were verified.

(78=15/43 | 57=9/15); 3. Body (128=23/43 | 54=9/15); 4. Music (278=9/43 | 297=8/15). These descriptors were inserted in the databases in an isolated and combined way.

Procedures

In relevant research, initially, the title and abstract were read and then the inclusion and exclusion criteria were applied. Inclusion criteria were: 1. *scientific research in Portuguese, English and Spanish*; 2. *literature area that meets the research objectives*. Exclusion criteria were: 1. *literature review articles and integrative review*, 2. *case reports*; 3. *research that is not related to the proposed objective*; 4. *full surveys not available or subscription required; 5. letters from the editor and editorials*; 6. *duplicate articles*.

After surveying the research, the analysis with interpretation was started, seeking to relate them to the objective of the present investigation. This research is classified as qualitative, as the data collected in this study were analyzed according to an analysis of data found in the literature. Qualitative researchers use their own eyes, ears and intelligence to collect detailed insights and descriptions of target populations, places and events. Their results are collected through a variety of methods, and often a researcher will use at least two or more of the following when conducting a qualitative study (Gil, 2009).

RESULTS

We can say that both music and RG are inter and intrapersonal communicational processes, and in view of this we observe the expressiveness of ideas and feelings through the body due to the kinesthetic body intelligence.

Expression exercises can represent a strong motivation for psychomotor development, facilitating dexterity, creativity and originality in the choice and execution of various motor actions with expressive qualities (Trevisan, 2016; Pereira, 2019; Zou, 2021). All possible

forms of bodily expression have a remarkable educational value, contributing to better self-knowledge in the field of gesture. Musical art involves movement in time and space (Zhou, 2021).

Another important issue is that RG activities and body expression reflect their influence on the aesthetic side of students' personality and leave their mark on early childhood psychomotor education (Craijdan, 2018; Nakashima et al., 2018; Handayani, 2020; Zanlorenci et al., 2020). There is an enlightening view in the sense that the educational perspectives provided by RG are unique and translate into the creation of emotions rich in meaning through motor expressiveness (Trevisan, 2016; Menegaldo & Bortoleto, 2017; Oliveira, 2017; Pereira, 2019).

RG can help communication through suggestive body expression and contributes to the development of motor expressiveness. The results obtained confirm the efficiency of the proposal, conceived so that the preparation includes aspects related to expression, rhythmicity and motor musicality (Paz et al, 2018; Pereira, 2019). We also agree with Trevisan (2016), Pereira (2019) and Oktariyana (2020) when they present some sensitive and fundamental points for RG. They argue that the approach of a varied and original artistic-motor content contributes to educating the attitude and artistic execution, developing body expressiveness, rhythmicity and motor musicality, to stimulate communication through appropriate and revealing body expression, as well as imagination of the subjects.

If we approach expressive motricity within a systematic learning process, we can favourably influence the path of spontaneous-unconscious expression to educated expressive behaviour, capable of responding effectively to the needs of communication and understanding, but also to sociocultural demands and norms (Trevisan, 2016; Toledo et al., 2018; Pereira, 2019).

Dance and rhythmic-musical preparation should be complemented with means mainly aimed at body expression (Trevisan, 2016; Carvalho & Silva, 2020; Gantcheva et al., 2021; Zhou,

2021). We recognize how much all possible forms of bodily expression have a remarkable educational value, contributing to better self-knowledge in the field of gesture (Paz et al, 2018; Zhou, 2021).

According to Trevisan (2016), Menegaldo and Bortoleto (2017), Oliveira (2017) and Pereira (2019), mastering gymnastics actions can richly contribute to the acquisition of self-awareness by developing the creativity of their own gestures and motor actions, of according to the style and specific personality of each one. Regarding the musical bond, Leandro (2018) and Zhou (2021) argue that it will be extremely valuable to educate the rhythmic sense of students and form their general musical culture, which will make them able to understand the message of the music and then transpose it through expressive body movement. However, Paz et al. (2018) emphasize that in an educational environment in expressive motricity, the subject must restructure and adapt his movement, in response to external temporal stimuli and in this perspective, music plays a particular role as it is a temporal art that performs the durations by organizing the sounds. The author declares that music helps to stimulate the imagination, creating some emotional states, and educating the ability of motor communication.

Within the scope of sports development and musical development integrated into RG, it is undoubtedly crucial to highlight the consecutive kinesis of a gymnast. Competitive activities must be musically congruent as stated in many competition regulations; for example, the International Confederation of Rhythmic Gymnastics postulated penalties for occurrences in the presentation such as lack of rhythm, between the athlete and the music (Menegaldo & Bortoleto, 2017).

We agree with Leandro (2018) when stating in RG, that musical interpretation and choreography are responsible for points that can be decisive in a dispute over a medal. The choice of music becomes one of the most important decisions in the development of

performance and must highlight the athlete's personality, talent and technicality (Paz et al, 2018). The issue of congruence between auditory and visual aspects has been studied extensively in various fields. In music itself, many studies deal with the bodily gestures of RG practitioners (Leandro, 2018). The author also highlights that musical performance combined with artistic gymnastics is relevant to enhance the display of heels, curves and other artistic shifts that, without music, would become boring, dull and emotionless. The quality of the alignment between music and gymnast can affect momentum, or excitement, particularly when performing an acrobatic element. He adds that the seriousness of musical participation in sports performances that include choreographic elements extends to synchronized swimming, figure skating and martial arts. Music is indispensable in any form of competition event and has a great influence on individual attendance. RG is an artistic activity (Olympic discipline), and it is important to communicate a theme, an idea that reflects the beauty in the musical and bodily representation as a single element on display (Menegaldo & Bortoleto, 2017; Paz et al., 2018).

Studies carried out suggest that psychology presents empirical results proving that music provides physical and psychological effects through the study of various musical components, such as tonality, tempo, rhythm and so on (Zhou, 2021). In previous studies, it is observed that the tonality of music affects mood change, that fast music results in excitement and emotional activity, and the reverse is true for slow music (Paz et al., 2018).

According to Leandro (2018), fast-paced music and simple rhythmic structure produce positive results in increasing blood pressure, ventilation and heart rate. In the past, researchers have proven that music has effects on endurance and emotion. The author adds that there is a growing interest in the study of music type and preference in sports activities.

The role and contribution of music in RG and its outcomes in providing ergogenic, psychological, psychophysical and psychophysiological effects have been analysed by

researchers (Menegaldo & Bortoleto, 2017). Furthermore, the congruence between music and dance is evident where participants correlate movement and sound (Trevisan, 2016; Paz et al., 2018; Pereira, 2019). We also emphasize how much the RG modality comprises an activity and sport whose subtlety, vivacity and emotionality exceed that determined by the technique (Nakashima et al., 2018; Paz et al., 2018).

CONCLUSIONS

The function of RG is the basis of a phenomenon in musical interpretation and use. Although RG original intention came from the fusion of expression between music and movement, the development of aesthetics, interpretation and a post-modern vision in music and dance contributed with new interpretations and functions. From a musical perspective, we conclude that music, musicality and understanding of musical elements are important factors that contribute to a more coherent and congruent audiovisual performance. We emphasize that music drives the gymnast and the audience. In the school context, it was concluded that RG combined with music help in body development and expressiveness. In particular, further research should be carried out testing the perception of gymnasts, musicians and audience perspectives, with the aim of proving that the function of music is an important means of improving a gymnast's movements, rather than an asynchronous background accompaniment. RG presents components of classical ballet showing plasticity, beauty and sensitivity to movements in addition to social inclusion.

In short, and after analyzing the 15 central pieces of research, the objective of the investigation that establishes the relationship between music and rhythmic gymnastics is timeless, but in the context of the current world of rampant technological relevance, musical participation in loco (and/or alive) in public preparation and presentation will be, yes, only and only, a memory of those who lived these times and, in person, realized its immense

importance and performative artistic framing much more pleasurable and ingenious, more challenging and less dependent on technological resources and more based on magic of art, interpretation and dialogue between artistic expressions.

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