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Improvement of Coordination Abilities through Dancesport among Middle Schoolers

Cristina Elena MORARU[1]*

Abstract

In the process of educating body stance included within aesthetic-artistic education, dance occupies an important role because it embodies harmoniously music, movement, and coordination between the two. The purpose of the paper is to contribute to the education of coordination abilities of middle schoolers in order for them to obtain a correct and harmonious body stance. The sample for this research comprised 16 female students aged between 10 and 14; I followed their evolution throughout a school year and the progress achieved regarding the education of coordination abilities. Practices comprised steps and step structures specific to dancesport, such as slow waltz, Viennese waltz, quickstep, samba, and cha-cha. The tests applied to the group were as follows: the test for skill speed (relay), the rhythm test, the Matorin test, and the motor memory test. Upon interpreting the results, it is worth pointing out an improvement of average values and standard deviation in relay from 19.685 ±0.913 to 19.064 ±0.842, an increase in grades to the rhythm test from 9.06 ± 0.771 to 9.75± 0.447, and an improvement of average values to the motor memory test from 8.18 ± 0.75 to 9.12 ± 0.619. To the Matorin test performed leftwards, an evolution of the average was observed from 345.714 ±31.735 to 362.5 ±27.368, and to the one performed rightwards, the mean value increased from 351.071 ± 24.975 to 371.428 ± 17.697. As a general conclusion, it may be stated that the means of dancesport contributed to the education of certain coordination abilities, which stands to confirm the hypothesis of this study.

Keywords: Motricity, coordination, optimization, dancesport.

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1. Introduction

Physical activity is a complex multifactorial behavior that is influenced by a variety of biological, behavioural, and environmental factors and interactions among factors. It is often assumed that enjoyable and successful participation in physical activities will promote further engagement and persistence in such activities [4].

In the process of educating body stance included within of aesthetic-artistic education, dance occupies an important role because it embodies harmoniously music, movement, and coordination between the two.

Specialists of the field and more, theoreticians and practitioners in the field and more, theoreticians and practitioners in the field of sport, researchers, psychologists, pedagogues, concerned with to the evolution of this discipline, have made various positive statements over time, more modest in the beginning, but afterwards in an increasingly prompt and scientific manner.

Starting from the premise that dancesport is a complex sport, whose practice requires a development of psychomotor aptitudes, we must justify the importance we believe coordination is due within such an analysis.

Coordination abilities are determined by the process of nervous system growth and by the number of motor skills held by a dancer. The development of coordination abilities may occur on two levels: the development of general coordination and the development of components of coordination abilities specific to dancesport. These two levels are in close interdependence, because the development of the first determines an increase in the indicators for the components of the other [7].

According to the authors Dragnea A., Bota A., coordination abilities designate generically a complex of mainly psychomotor qualities that involve the capacity of learning new movements rapidly, of adapting quickly and effectively to various conditions, by restructuring the existing motor fund [1].

2. Problem Statement

Coordination abilities are determined by the processes of gesture guidance and regulation, and they represent the foundation of a good sensory-motor learning capacity. Coordination abilities put the athlete in a situation where he has to coordinate in a certain and economic manner his motor actions into possible (stereotypical) and unpredictable (adaptation) situations and to learn in a relatively small amount of time the sports gestures [3].

The most common classification of coordination abilities, cited in numerous bibliographic sources, is the one elaborated by Blüme, apud Manno R., (1996), reprised by several specialists in the field. *Direction and control ability*: ability of connecting and combining movements, differentiation ability, balance ability, orientation ability, and rhythm ability*; Adaptation ability*: balance ability, orientation ability, rhythm ability, reaction ability, and transformation ability. *Motor learning ability:* ability of connecting and combining movements, differentiation ability, balance ability, orientation ability, and rhythm ability [5].

In dancesport, coordination abilities are present as follows:

Basic coordination abilities

- *Motor learning ability, which depends on:* the quality of perceptive, cognitive, and memorizing processes, based on a good function of information reception, processing, and storage mechanisms; the athlete's capacity of memorizing and displaying as correctly as possible the exercises and structures presented for learning and the motor memory level; the athlete's motor experience and the volume of technical skills acquired and mastered by the athlete.
- *Movement direction and control ability* – it concerns especially the following coordination components: kinaesthetic differentiation, spatial orientation, and balance.
- *Movement adaptation and transformation ability, which mainly depends on:* the athlete's motor experience and of his capacity of adjusting execution to new situations; the athlete's possibilities of creating new versions by his ability to transform and adapt certain body technique elements; this leads to original compositions of competition choreographies and, finally, to an enrichment of the technical content of the sports branch.

Specific coordination abilities

- *Ability to combine and associate movements differently:* it enables connections between technical elements within various movement groups; it involves overall and segmental coordination, in the particular conditions of dancesport.
- *Static and dynamic balance control ability:* maintaining body stability during flexibility and balance elements such as pirouettes, cambrés, etc. For this group of elements, maintaining balance is more challenging, because the body is engaged in a type of balance or in a movement of interrupted or continuous rotation, when the free segment modifies its position, while the support point remains unchanged; body balance during the execution of specific technical elements, where shape must

be well defined and range must reach an optimal level (pirouettsa, cambrés, and various balance elements).

- *Kinaesthetic differentiation ability:* differentiating the level of muscle tension, angular displacement, and accelerating the speed of body segments; rapidly alternating contraction and relaxation; controlling the range of motion.
- *Motor reaction, movement anticipation and transformation ability:* the athlete's capacity of transforming and adapting certain elements, following technical errors; finding the optimal solutions for solving critical situations occurred throughout competition choreography.
- *Spatial and temporal orientation ability:* modifying body positions, by performance level (high or low stances), by the direction, space, and time of choreography; the athlete's capacity of modifying and coordinating body positions in given space and time.
- *Rhythm ability:* adapting to the particularities of music accompaniment; perceiving and illustrating through movement the musical rhythm and tempo.

Dancing is a complex process promoting learning and body awareness (Nanni, 2008). Damasio, (2010) stated that with every move, new cortical maps are created to increase the repertoire of new possible motor responses. Messages obtained by the "sensory gateway" i.e., sensory organs during body movements, are organized in an overall brain map and are shaped according to changes during development, as well as variations in the amplitude and quality of movements [2].

Looking at dance requires that we begin to find a rich vocabulary for talking about dimensions like emotion, expressivity, sensation, and proprioception that do not fall prey to the Scylla and Charybdis of scientism and the construction of some transcendent, a historical and unified "self" [8]. On the other hand, dance is an intermittent exercise, and its metabolic effect depends on the dance style and the intensity and duration of the choreography in question. The greater cardiorespiratory demands of the dance performances than classes or rehearsals underline the need of supplementary fitness training for dancers. This type of training enhances not only dancers' aerobic capacity, strength, body composition, and flexibility, but also their aesthetic competence [9].

Dancesport activates all body muscles, including the face muscles, because it requires both body and facial expression, at a level that determines the intensification and generalization of blood flow, the opening of capillaries, and the activation of nutritional exchanges in the whole body.

Contractions do not have peak intensity; the muscle contraction force is related to choreography, type of dance, and to the partner [6].

A top-level dancer must have both conditional and coordinative skills. With regard to conditional skills a key role is played by resistance training, joint mobility and movement speed. Coordinative skills as well flexibility, and speed are essential to reach a top-level performance. So a typical dance-sport training session has to stimulate all this skills [10].

3. Material and method

The purpose of the paper is to contribute to the education of motor abilities of middle schoolers and to obtain a correct and harmonious body stance. *The hypothesis* of the research was the following: the use of means specific to dancesport in the training of middle schoolers will lead to an improvement in their coordination abilities. The sample for this research comprised 16 female students aged between 10 and 14; I followed their evolution throughout a school year and the progress achieved regarding the education of coordination abilities. Practices took place three times a week, each of them lasting for 90 minutes, and they comprised steps and step structures specific to dancesport, such as slow waltz, Viennese waltz, quickstep, samba, and cha-cha. The tests applied to the group were the following: test for skill speed (relay), rhythm test, Matorin test, and motor memory test.

4. Findings

Table 1. Table with the values obtained in the two tests

Statistics Parameters	Tests	Relay (seconds)	Matorin leftwards (degrees)	Matorin rightwards (degrees)
Mean	Initial testing	19.685	345.714	351.071
	Final testing	19.064	362.5	371.428
Standard deviation	Initial testing	±0.913	±31.735	24.975
	Final testing	±0.842	±27.368	17.697
Coefficient of variation	Initial testing	4.638%	9.17%	7.113%
	Final testing	4.416%	7.549%	4.764%

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Table 2. Table with the values obtained in the two tests

Statistics Parameters	Tests	Rhythm (note)	Motor memory (grade)
Mean	Initial testing	9.06	8.18
	Final testing	9.75	9.12
Standard deviation	Initial testing	± 0.771	± 0.75
	Final testing	± 0.447	± 0.619
Coefficient of variation	Initial testing	8.509%	9.168%
	Final testing	4.584%	6.787%

Upon interpreting the results, it is worth pointing out an improvement of average values and standard deviation in relay from 19.685 ±0.913 to 19.064±0.842 and a decrease in variability coefficient from 4.638% to 4.416%; an increase in grades to *the rhythm test* from 9.06 ± 0.771 to 9.75± 0.447 and a decrease in homogeneity values from 8.509% to 4.584%; an improvement of average values to *the motor memory test* from 8.18 ± 0.75 to 9.12 ± 0.619, and a value of variability coefficient decreasing from 9.168% to 6.787%; to *Matorin test performed leftwards*, an evolution of the average was observed from 345.714 ±31.735 to 362.5 ±27.368 and an improvement in homogeneity from 9.17% to 7.549%, while to the one performed rightwards, the mean value and the standard deviation increased from 351.071 ± 24.975 to 371.428 ± 17.697, while the value of variability coefficient dropped from 7.113% to 4.764%.

5. Conclusions

Dancesport contributes to both the education of motor abilities and the acquisition of artistic sense among practitioners. Dancesport may be the linchpin between physical and aesthetic education, which helps acquiring artistic sensibility, kinaesthetic sense, and a musical culture. The coordination between movements and music involves the total and conscious subordination of motor activity, of form and content particularities of the musical pieces used.

Upon interpreting statistically and mathematically the data obtained in the two tests, it may be stated that the use of carefully-selected means specific to dancesport, compatible with the development level of middle

schoolers, determines an improvement of coordination abilities and of aesthetic sense. The systematic use of dance elements during the physical education class contributes to both the harmonious physical development of students and to an increase in the interest for physical activities.

Therefore, it may be noted as a general conclusion that the means of dancesport contributed to the education of certain coordination abilities, which stands to confirm the hypothesis of this study.

Acknowledgement

I hereby declare that the participants to the research were informed concerning the voluntary character of participation in the research, that they understood the received information and the fact that they may withdraw from the research at any given time, without any negative consequences. The research met the ethical standards of the research. The participants (or their tutors) gave their consent for the participation in the research.

References

[1] Dragnea A, Bota A. Teoria activităţilor motrice [Theory of Motor Activities]. Bucureşti: Didactică şi Pedagogică R.A; 1999. 243.
[2] Fonseca CC. et al. Ballroom dance and body size perception. Perceptual and Motor Skills. 2014; 119 (2): 495-503.
[3] Frey G. cited by Tudor V. Capacităţile condiţionale, coordinative şi intermediare [Conditional, coordination, and intermediary skills]. Bucureşti: R.A.I.; 1999. 121.
[4] Lopes VP, Rodrigues LP, Maia JAR, Malina RM. Motor coordination as predictor of physical activity in childhood. Scandinavian Journal of Medicine & Science in Sports. 2011; 21(5): 663–669.
[5] Manno R. Bazele teoretice ale antrenamentului sportiv [Theoretical bases of Sports Training]. Bucureşti: CCPS; 1996. p141.
[6] Mihaiu C., Aducovschi D. Dansul sportiv pe înţelesul tuturor [Dancesport for All]. Bucureşti: University Press; 2014. p73.
[7] Năstase VD. Dans Sportiv. Metodologia performanţei [Performance Methodology]. Piteşti: Paralela 45; 2011. 177-178.
[8] Picart CJS. From Ballroom to DanceSport, New York: State University of New York Press; 2006. p38.
[9] Rodrigues-Krause J. Cardiorespiratory Considerations in Dance: From Classes to Performances. Journal of dance medicine and science: 2015; 19 (3): 91-102.

[10] Zanchini A., Malaguti M. Energy requirements in top-level dancesport athletes. Journal of Human Sport & Exercise. 2014; 9(1): 148-156.