## Original Article

# Study on the Influence of the Specific Training on the Technical and Artistic Execution of the Choreographies by the Dancers Aged 12 – 13 Years

MARIA FLORICA GRIGORE[1], VIRGIL GRIGORE[2], VLADIMIR POTOP[3]
[1]Physical Education and Sport, Ecological University of Bucharest, ROMANIA
[2] National Palace of Children, Bucharest, ROMANIA

**Abstract**:
*Purpose.* The paper demonstrates the influence of the specific training on the technical and artistic execution of the choreographies of Standard and Latin-American dances by the 12-13 years old dancers. *Material.* With this aim in view, an ascertaining and formative pedagogical experiment was conducted from 2011 to 2013 in the „Two Step" Dance Sport Club. Two groups of investigation participated in this study: an experimental group and a control group, each one formed of 12 dancers of 12 and 13 years old, corresponding to Junior 1 sports category. A test taken over from Barow & McGee and adapted to dance sport, graded with marks from 0 to 10 points, was used to assess the quality of the technical and artistic execution of the  competition choreographies of Standard and Latin dances. *Results.* The different approaches to the training components throughout the research have also included the participation in formative competitions for checking dancers' reactivity to the competitive stress and to assess their training level. The quality of competition choreographies execution of Standard and Latin dances (separately) in the case of Junior 1 dancers (12 – 13 years old) was monitored. *Discussions.* The participation of juniors in both sections - Standard and Latino, separately, but also in the competition of 10 dances, determined the assessment of the quality of competition choreographies execution. The review of the specialized literature and the opinion of specialists revealed that the specific training of the dancers is based on the integral approach to the training sessions through a permanent increase of the complexity and refinement of the technique and choreographic compositions. *Conclusions.* The combination of the means of technical and artistic training and their overlapping in different choreographies for the dancers of 12 – 13 years old led to the development of the capacity for performance and to the achievement of performance objectives, implicitly.
**Key Words***: training session, choreographies, dance sport, integral training, performance*

**Introduction**

Dance sport is one of the most enjoyable activities; when dancing you feel the music and express your feelings by movement (Potop, 2008). Currently, dance sport is a discipline with multilateral possibilities for the education of its practitioners (Laird, 2001). According to V. Năstase, 2002, the factors that influence the performance in dance sport are the following ones: motor skills, specific abilities (elements of technique and choreographies in Standard and Latin dances), somatic, physiological and mental particularities, acuity of acoustic & vestibular and kinesthetic analyzers, environmental and social factors (Guy, Brown, & Pozo, 2007; Liu,Yang, & Zhou, 2005;).

In dance sport, the technique involves dance steps and figures executed in couple, specific to the two sections, Standard and Latino-American, and differentiated per each dance separately. Therefore we can speak about the technique of waltz, technique of tango, technique of rumba, technique of jive etc. (Potop, 2008). Even if there are resemblances between the motor structures and the biomechanics of movements in certain dances, the body posture, the handhold and rhythm provide distinct particularities to each dance (Grigore, 2014; Năstase, 2010a; Moore, 2002).

Năstase D. V. (2010b, p. 1130) considers that a dancer tells a story by his or her choreography, each step is a word connected to the others, linked in sentences and phrases, namely in technical structures or figures consistent with rules of composition and musical phrasing applied strictly. Dobrescu, T. (2006, p. 380) highlights the requirements to be respected during the execution of all technical actions which enhance the importance of dancer's artistic training. The components of the artistic training, as defined in artistic gymnastics by Grigore V. (2002), quoted by Dragnea, A. & Teodorescu, S. (2002, p. 406), can be also found in dancers' training. The technique specificity involves artistic practicing too;  the training is performed in parallel, in independent training sequences using methods of ballet, exercises of body language, dance steps belonging to other kinds of dance (modern, folk, contemporary dance etc.), practicing in front of a mirror, exercises of musicality, improvisation on different music genres, creation exercises etc.

Corresponding Author: VIRGIL GRIGORE, E-mail: tgrigore13@yahoo.com

*The purpose of the paper* is to study the influence of the specific training on the technical and artistic executions of the choreographies of Standard and Latin dances by the dancers aged 12 to 13 years.

*Hypothesis of the paper*. We consider that the combination of the technical and artistic training means and their overlapping in various choreographies executed by 12 to 13 years old dancers will lead to the development of the capacity for performance and to the achievement of the performance objectives, implicitly.

**Material & methods**

*Participants*

Two investigation groups participated in this study: an experimental group and a control group. Each group was formed of 12 dancers of 12-13 years old, corresponding to the classification category Junior 1. The subjects are members of the „Two Step" Dance Sport Club and have been practicing dance sport for 4-5 years; they also participated in national and international competitions.

*Procedure*

Taking into account the similarities of dance sport and gymnastics and also the lack of objective tools for dance quality evaluation, a test event adapted from Barow & McGee (1971) gymnastics test was used for the assessment of the quality of the technical and artistic execution of the competitive choreographies. Marks from 0 to 10 were given, depending on the following criteria: control of body and segments; technique of dance steps and figures execution; rhythm; collaboration with the partner, movement fluidity. The examiner gives marks and grades, observing the criteria listed below:

- *10 points – excellent*: perfectly controlled body and segments, very correct dance steps, musical rhythm strictly respected and expressed by movement, perfect synchronization of the couple, fluidity given by the subtle passage from one motor structure to another.

- *7-9 points – good*: well-controlled body and segments, dance steps with slight hesitations, musical rhythm respected but without motor expression , slight desynchronization of the couple(delay between command and action, collision with other couples, loss of hold etc.), slight disruptions, stationary positions during choreography.

- *4-6 points – average*: correct execution but lacking in details.

- *1-3 points – poor*: absence of postural control, erroneous technique of steps execution, losses of rhythm, poor fluidity.

- *0 points – failure*: poor executions in terms of posture, technique, rhythm, work in couple, fluidity.

The research was carried out from 2011 to 2013 in the ascertaining and formative experiment; the dancers executed all 10 dances and were evaluated for each dance separately; a mean was calculated for each section and afterwards the ranking system was used for the statistical interpretation.

*Data collection and statistical analysis*

The statistical-mathematical processing was made by means of SPSS software and involves the calculation of several indicators such as: the arithmetic mean, standard deviation, average deviation, amplitude, coefficient of variation (standard values: $C_v < 10 \%$ homogeneous sample; $10 \% < C_v <= 20 \%$ relatively homogeneous sample; $C_v > 20 \%$ non-homogeneous sample). Wilcoxon test is a bilateral test of significance, non-parametric, used for the comparison of two groups of subjects and for performing two measurements in the same group of subjects as well in order to identify the differences between the arithmetic means. It is an alternative to the usual t-Student test. For the validation of the research hypothesis, we used the Mann-Whitney test within the computerized analysis of the data recorded in the final testing of the control group and experimental group as well, by using the SPSS software (Popa, 2008).

**Results**

The methodology of specific training involved various approaches to the training components all along this year and also the participation in competitions with formative character. The purpose was to bring the dancers as close as possible to their maximum level of training but also to familiarize them with the competition atmosphere, to check their reactions to the competitive stress and to asses their training level.
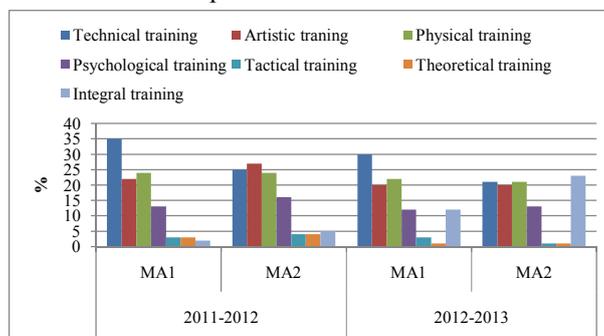


*Fig. 1. Weight of training components in the preparation of 12-13 years old dancers*
*Note: MA1 – macro-cycle 1, MA2 – macro-cycle 2; period 2011-2012 ascertaining experiment, 2012-2013 formative experiment.*

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In tables 1, 2, 3 and 4 are listed the marks obtained by the dancers in the control and experimental group for the dances of the Standard and Latino-American sections following up the performance of the competition choreographies. The marks were submitted to a comparative statistical analysis between the initial and final testing that led to the indicators listed below.

**Table 1.** Results of statistical indicators for the test event of assessment of the quality of the competitive choreographies execution - Standard dances – Junior 1 (12 – 13 years old), n=12

| Statistical indicators | Control group | | Experimental group | |
|---|---|---|---|---|
| | Initial testing | Final testing | Initial testing | Final testing |
| Mean | 6.97 | 7.43 | 7.18 | 8.78 |
| Difference of means | 0.46 | | 1.60 | |
| Median | 7.20 | 7.30 | 7.20 | 8.70 |
| Standard deviation | 1.38 | 1.20 | 1.47 | 0.95 |
| Minimum | 4.00 | 5.80 | 5.20 | 7.00 |
| Maximum | 8.60 | 9.20 | 9.20 | 10.00 |
| Amplitude | 4.60 | 3.40 | 4.00 | 3.00 |
| Coefficient of variation (%) | 19.8 | 16.2 | 20.4 | 10.8 |

**Table 2.** Results of Wilcoxon test for the assessment of the quality of the competitive choreographies execution - Standard dances, n=12

| Test parameters | Initial-final testing | |
|---|---|---|
| | Control group | Experimental group |
| Z | -.180 | -3.070 |
| Size of effect (Cohen) | 0.05 | 0.89 |
| P (bilateral) | 0.857 | 0.002 |

The execution of the Standard dances competition choreographies highlighted the fact that the athletes of the control group had an initial mean of 6.97 but in the final testing they had 7.43, with a difference of 0.46; in both tests, the data are relatively homogenously dispersed around the mean. Cohen indicator shows an effect size of 0.05, the bilateral test Wilcoxon shows the value for $p = 0.857 > 0.05$, values that prove that there are no significant differences between the two tests of the control group. This statistical analysis can be interpreted by applying a training technology that is not oriented towards integral training objectives. In the case of the athletes included in the experimental group, the Standard dances were assessed with an arithmetic mean of 7.18 in initial testing and 8.78 in final testing, identifying an increase by 22.27% of the execution quality, namely a difference of 1.60 between means. The coefficient of variation indicates that the data are relatively homogenously dispersed around the mean in the initial testing of the experimental group and homogeneously in the final testing of the same group. The size of effect offered by Cohen indicator, with a value of 0.89 proves that there is a quite large difference between the two tests. The significance test shows a threshold of significance $p= 0.002 < 0.05$, which validates the hypothesis of the research. Because it was statistically demonstrated that the differences between the arithmetic means are significant, we can state that the methodology of training for Juniors I in the experimental group led to the increase of the quality of the execution of Standard dances competitive choreographies (tables 1 and 2).

The coach gave marks (statistically processed afterwards) for the Latin dances too. Tables 3 and 4 present the main statistical indicators calculated.

**Table 3.** Results of statistical indicators for the test event of assessment of the quality of the competitive choreographies execution - Latin dances – Junior 1 (12 – 13 years old), n=12

| Statistical indicators | Control group | | Experimental group | |
|---|---|---|---|---|
| | Initial testing | Final testing | | Initial testing |
| Mean | 7.30 | 7.73 | 7.13 | 8.62 |
| Difference of means | 0.43 | | 1.48 | |
| Median | 7.30 | 7.80 | 7.00 | 9.00 |
| Standard deviation | 0.94 | 1.02 | 1.01 | 0.92 |
| Minimum | 5.80 | 6.00 | 5.80 | 7.00 |
| Maximum | 9.20 | 10.00 | 8.60 | 10.00 |
| Amplitude | 3.40 | 4.00 | 2.80 | 3.00 |
| Coefficient of variation (%) | 12.8 | 13.2 | 14.2 | 10.6 |

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**Table 4.** Wilcoxon test for the assessment of the quality of the competitive choreographies execution - Latin dances, n=12

| Test parameters | Control group | Experimental group |
|---|---|---|
| Z | -.180 | -3.070 |
| Effect size (Cohen) | 0.05 | 0.89 |
| P (bilateral) | 0.857 | 0.002 |

The arithmetic mean of the marks obtained by the control group for the execution of the competition choreographies of the Latin section dances was initially equal to 7.30 and finally equal to 7.73. In terms of coefficient of variation, we notice that the data are homogeneously dispersed around the mean, both in initial and final testing. The fact that the difference recorded in the progress of the control group dancers is very small is supported by the effect size of 0.05. Wilcoxon bilateral test shows a threshold of significance p = 0.857 > 0.05 and proves that there are no statistically significant differences between the tests regarding the quality of execution of Latin dances choreographies in the control group, assessed according to the scale of Barrow and McGee, applied and modified by us.

For the Latin dances presented in competition choreographies, the experimental group received in initial testing an arithmetic mean of 7.13 and in final testing an arithmetic mean of 8.62. The mean of the marks given by the coach in final testing increased by 1.48, therefore a progress of 20.79% was recorded. We consider that, according to the coefficient of variation, the data are homogeneously dispersed around the mean both in initial and final testing. Cohen indicator shows an effect size of 0.89 and demonstrates a large to very large difference between tests. The Wilcoxon bilateral test indicates a value of p = 0.002 < 0.05, based on which we can express the validity of the research hypothesis and the rejection of the null hypothesis. Given the fact that there are statistically significant differences between the performances achieved by the experimental group dancers in the execution of Latin dances, we consider the efficiency of their training methodology as an independent variable in our experimental research.

Concerning the Standard and Latino-American dances in final testing, the quality of the execution of competition choreographies increased in all the subjects of the research as shown by the statistical indicators in tables 5 and 6.

**Table 5.** Values of Mann-Whitney test for the assessment of the quality of execution of Standard dances choreographies – control group and experimental group, in final testing

| Group | N | Ranks mean | Ranks sum |
|---|---|---|---|
| Control | 12 | 15.63 | 187.50 |
| Experiment | 12 | 9.38 | 112.50 |
| Total | 24 | | |
| Effect size (Cohen indicator) | | 0.63 | |

| Statistical test | Values |
|---|---|
| Mann-Whitney U | 34.500 |
| Wilcoxon W | 112.500 |
| Z | -2.166 |
| P (Sig.) | 0.030 |

The marks given by the coach, consistent with the assessment scale, taken over from Barrow and McGee and adapted to Standard dances, were grouped around the mean of 7.43 in the control group and 8.78 in the experimental group. We notice that the mean of the experimental group marks is higher by 1.35 and that the dispersion of data is relatively homogenous in the control group and homogeneous in the experimental group. The effect size is 0.63 and shows an average to large difference between the two groups. As a result of the Mann-Whitney bilateral test which proves a significance threshold p (Sig.) =0.030 < 0.05, we reject the null hypothesis and we validate the research hypothesis. It is correct to state that the differences are statistically significant between the two groups in terms of quality of execution of the Standard dances and the methodology of specific training used for the experimental group dancers was efficient.

The participation of Junior dancers in both sections (Standard and Latin) separately but also in the 10 dance event, determined the assessment of the quality of execution of the competition choreographies. In the final testing, the statistical indicators listed below were calculated as follows (tables 5 and 6):

**Table 6.** Values of Mann-Whitney test for the assessment of the quality of execution of Latin dances choreographies – control group and experimental group, in final testing

| Group | N | Ranks mean | Ranks sum |
|---|---|---|---|
| Control | 12 | 15.63 | 187.50 |
| Experiment | 12 | 9.38 | 112.50 |
| Total | 24 | | |
| Effect size (Cohen indicator) | | 0.63 | |

| Statistical test | Values |
|---|---|
| Mann-Whitney U | 34.500 |
| Wilcoxon W | 112.500 |
| Z | -2.166 |
| P (Sig.) | 0.030 |

The performance of dancers in the execution of the Latin dances choreographies was evaluated by the coach with a mean of the marks of 7.73, for the control group, and 8.62 for the experimental group in the final testing of our

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research. The data indicate dispersion with homogeneous structure in both groups, while the effect size reaches the value of 0.63 and shows an average to large difference between the two groups. Based on the significance test, there is a value p (Sig.) =0.030 < 0.05 that entitles us to reject the null hypothesis and to validate the research hypothesis. We notice statistically significant differences between the two groups and an increased efficiency of the specific training methodology of the dancers of the experimental group in terms of higher quality execution of Latin dances choreographies.

The graphical representation of the marks given to the dancers for the execution quality of the competition choreographies–Standard and Latin-American sections – in final testing is shown in figures 2 and 3.
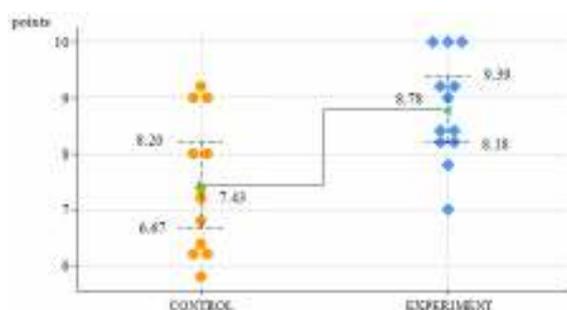


Fig. 2. Graphical representation of the marks given to dancers for the quality of execution of competition choreographies – Standard section, final testing
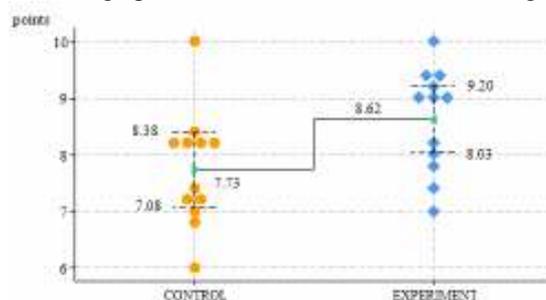


Fig. 3. Graphical representation of the marks given to dancers for the quality of execution of competition choreographies – Latin section, final testing

**Discussions**

The analysis of the annual training plan used from 2011 to 2012 for the Junior 1 dancers, according to the ascertaining experiment and the results achieved in the previous competitions, was the base for the training level diagnosis and for the forecasting about the evolution of their capacity for performance. Throughout the period of the experiment itself (formative period) from September 2012 to September 2013, the training program took into consideration the interconnection of sports training components and helped to highlight the methodology of dancers' specific training in the experimental group.

The periodization of the training for the experimental group was double, with two important competitions during a training year, namely the Romanian National Championship of March 2013 and the German Open Championship (Stuttgart), organized by World Dance Sport Federation in August 2013.

The methodology of specific training of Junior 1 dancers included in the experimental group involved the observance of the annual plan of training. The distinctive particularity of this methodology is given by the weight assigned to the sports training components during the mezzo-structures associated to the training year 2012 – 2013 and by the attention paid to the integral training, compared to the previous year (fig. 1). Thus, over the training year 2012 – 2013, the weight of the technical training was 27%, artistic training 20%, physical training 21%. The work for mental training was 12%, tactical training 2% and theoretical training 1%. We notice the importance given to the integral training, namely 17%.

The motor skills specific to the technical content of dance are developed along the process of motor learning. They are the result of adequate practicing during all the stages of this process. Motor learning involves a noticeable behavior resulted from the assembly of „*processes associated to practice and experience that lead to relatively permanent changes*" in subject's behavior (Bota, 2006, p. 229). Because the specific technique of dance sport requires a good neuromuscular control and a fine psychomotor adjustment of the motor acts and actions, it is necessary to bring to the fore the aspects connected to these problems, regarding the applications of the motor control theory offered by Magill R. A. (2004, p. 53) and particularized by us for dance sport.

In the opinion of Năstase D. V. (2010b, p. 35), the specific training of dancers is based on the following elements: integral approach of the training by a continuous increase of the complexity and refinement of the technique and choreographic compositions; optimization of an ideal functional disposition and keeping the physiological capacity within the effort parameters; increase of the level of mental and physical adaptability to the specific training and competition stimuli; achievement of meta-communication and passage from the

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interpretative automatisms to the expressive-conscious communication; awareness regarding the necessity of integral training. Vişan, A., (2005, p. 27) reveals the aspects to be monitored in dancer's body training by the automation of motor skills and abilities , development of motor capacity and motor intelligence, power of expression depending on the power of thoughts, mind and feelings etc. Mihaiu, C. (2010, p. 78) shows the indissoluble connection between the technical content and the artistic part of the routines, leading to the approach of the technical and artistic training as a unitary whole, in separate training sessions and common ones as well.

**Conclusions**

The difficulty to establish the specific training methodology of dancers is given by the interdependence of the training components , the execution of the competition choreographies by the couples, the double periodization of the training, the determination of the target-competitions and the specific manifestations of the pubertal age that often have a bad influence on the athlete's performance behavior.

A proper analysis of dance training components provides favorable premises for including in the specific training methodology the key elements required by the capacity for performance and the achievement of high results in competition.

The combination of the means of technical and artistic training and their overlapping in different choreographies in the case of the 12 – 13 years old dancers led to the development of their capacity for performance and to the achievement of the performance objectives, which confirms the hypothesis of the paper.

**Conflicts of interest**

The authors have no conflicts of interest to declare.

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