

THE CONTRIBUTION OF TRACK AND FIELD APPLICATIVE ACTIVITIES TO THE IMPROVEMENT OF MOTOR CAPACITY FOR MIDDLE SCHOOL STUDENTS DURING THE PHYSICAL EDUCATION CLASS

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Abstract: For middle school students, track and field applicative activities energize activity, capture their interest and offer the possibility to improve and use what they learned in various conditions. The research had the hypothesis that using relay races and track and field applicative activities during PE classes throughout the school year will result in an improvement of students' motor capacity, the harmonious physical development and the acquisition of motor skills and habits useful in daily life and for performance in sport. The research was done by following rigorously the tasks put forward at High-school "Mihai Eminescu" Dumbrăveni, Suceava, for 6th and 7th grades with mixed collectives. The classes were held in the school's gym or on the sport court. The results of all four tests show a progress of the trial group, confirming the fact that the use of track and field applicative activities throughout the school year leads to an increase in students' performance, to the development of their general motor capacity. Following the experiment, the results of the trial group confirm the hypothesis of this study, the motor capacity can be improved by use of track and field applicative activities during the PE class and put forward that these should be employed more frequently therein.

Introduction

Track and field applicative activities are an efficient means to developing and strengthening of motor qualities and habits and represent global activities that aim to capitalize, in new practice conditions, on knowledge, skills and habits obtained in prior activities, by repeating the exercises in an attractive, enjoyable and challenging way. Track and field applicative activities, relay races and motion games are not an end in of themselves, but a means to one. They usually include track and field

applicative habits combined with running and jumping and involving the presence of various apparatuses and didactic means that require special attention with regard to their stability, surface quality, hygiene and dimensions. The efficiency of track and field applicative activities is contingent on the number and structure of the habits required by their length, dynamicity, the number of repetitions and the effort spent by each participant [1].

The introduction of track and field applicative activities in the PE (Physical Education) class had as targets the removal of boredom, the development of students' body and competitive spirit, as well as the lessons' objectives. The responsible use of track and field applicative activities during PE classes will lead to significant results with regard to the development of students' motor capacity.

Using track and field applicative activities during the PE class must follow these objectives:

- influencing in a beneficial manner the general development of the organism and the improvement of its vital functions;
- forming and developing a self-improving mind set, of moral-volitional characteristics, of a sense for aesthetics, of a real capacity for assessment and self-assessment;
- developing sociability, collaboration, a sense of order and action according to a set of rules;
- developing the habit of independent physical exercise;
- developing the interest for dynamicity (because track and field applicative activities are engaging);
- forming and improving motor skills with applicative traits;
- improving the students' general motor capacity required for sport related activities;
- forming and developing intellectual activities (thought, imagination, reason, attention), affective processes (emotions, feelings, interests, motivations, sympathies, joy, respect, justice, responsibility) and sociability (collaboration).

Rață G., Rață Ghe. (2008) show that track and field applicative activities can be introduced in all stages of a PE class and that anticipating a place for each exercise in these stages is not recommended due to the fact that, in some situations, the same exercise can appear in different stages of the lesson.

For middle school students, track and field applicative activities energize activity, capture their interest and offer the possibility to improve and use what they learned in various conditions. Track and field

applicative activities represent a string of installations, apparatuses, objects on a track, in an order determined by the aims of the activities. To achieve the educational objective of track and field applicative activities one must take into account the choice of activities, their organization and evolution, all the while respecting various methodical conditions.

Cârstea G. (2000) states that track and field applicative activities include track and field applicative habits combined with running and jumping and involving the presence of various apparatuses and didactic means that require special attention with regard to their stability, surface quality, hygiene and dimensions. The efficiency of track and field applicative activities is contingent on the number and structure of the habits required by their length, dynamicity, the number of repetitions and the effort spent by each participant.

The methodical conditions for efficient track and field applicative activities during the PE class are:

- ensuring the safety of the participants by checking the status of the apparatuses;
- the correct execution of applicative habits which is dependent on the participant's comprehension of the habit's basic mechanism, the basic motor skills being developed satisfactorily with an emphasis on strength and dexterity;
- adequately organizing of the group of students in formations for locomotion or exercise, formations chosen according to working conditions, such as the dimensions of the work space or the size of the group;
- choosing accessible activities based on the students' level of physical training and knowledge and organizing them logically.

In the work „Terminologia educației fizice și sportului”, motor capacity is described as the totality of natural and acquired motor possibilities that permit executing efforts varying in structure or amount. „ Motor capacity is a dynamic human potential (either progressive or regressive in ontogenesis) given by the dialectical unity of motor qualities and habits or motor skills” [5]. The short lap can be used to develop the motor quality of speed or strength or a combination of the two; the standard easy or standard difficult lap helps develop speed endurance or strength endurance; the long lap is used especially to improve various forms of endurance [6].

The choice of this topic was determined by the fact that the contribution of track and field applicative activities and exercises with various objects and apparatuses to the improvement of students' motor

capacity was evident after employing them during the PE class. Furthermore, this study is a means to improve students' motor capacity and physical qualities by employing track and field applicative activities during PE classes.

Developing the students' motor capacity through the use of track and field applicative activities helps their acquisition of technical processes particular to various sports.

It was observed that employing track and field applicative activities during the PE class has led to a reduction in boredom and an increase in the students' interest for competition, self-improvement and the class's efficiency. Improving the motor capacity during the PE class for middle school students through the use of track and field applicative activities is a priority concern and a tier 1 objective.

Tudor O. Bompă (2001) it is stated that the use of biometric qualities during the PE class is of great importance, due to the fact that they contribute to the improvement of motor capacity when applied in real life, to the development of students' motivation concerning the physical education activities and to their responsibility towards their own physical development.

Octavian Bănăţan (1983) describes in detail how to employ track and field applicative activities during PE classes and presents multiple exercises using objects and apparatuses, as well.

In conclusion, it can be said that the pubertal stage is the best time to acquire most motor habits particular to various sport branches, as well as for developing the qualities of speed, endurance and dexterity. Besides improving basic motor habits previously described, the introduction of new branches and sport tasks is a significant objective of this stage and it must be followed by an increase in the capacity for application of motor habits and skills in various conditions and in the students' free time [4].

Material-method

The research had the hypothesis that using relay races and track and field applicative activities during PE classes throughout the school year will result in an improvement of students' motor capacity, the harmonious physical development and the acquisition of motor skills and habits useful in daily life and for performance in sport.

Starting from observations made during PE classes where track and field applicative activities, exercises and apparatuses it can be said that this study aims to prove the role of track and field applicative

activities in the development of the motor capacity and skills and their influence on the general development of the body, the improvement of vital functions. With this in mind, I intended to introduce in PE classes, regardless of their type, relay races and track and field applicative activities as means to develop the students' motor capacity.

The research was done by following rigorously the tasks put forward at Technological High-school "Mihai Eminescu" Dumbraveni, Suceava, for 6th and 7th grades with mixed collectives. The classes were held in the school's gym or on the sport court. The targets for research, namely choosing the subjects and executing their individual analysis, were determined using research techniques and methods (bibliographic study, observation, measurement of results in sport tests). After learning the structure of the school year, I wrote the annual plans and in October I tested both the control and trial classes, then, in May, the final test was administered with the same parameters and in the same conditions as the initial test.

After analyzing and comparing the gathered data on the two tests and using statistical and mathematical interpretation, an objective and accurate analysis report was created.

The study took place during the 2016-2017 school year, starting on October 1st and ending on June 16th.

I used the method of the experiment using two trial classes with mixed collectives – 6th D and 7th A – and two control classes, again, with mixed collectives – 6th E and 7th B. at the beginning of the 2016-2017 school year, in October, I tested by means of sport tests both groups and afterwards introduced track and field applicative activities in the PE classes for the trial group only.

Results and discussions

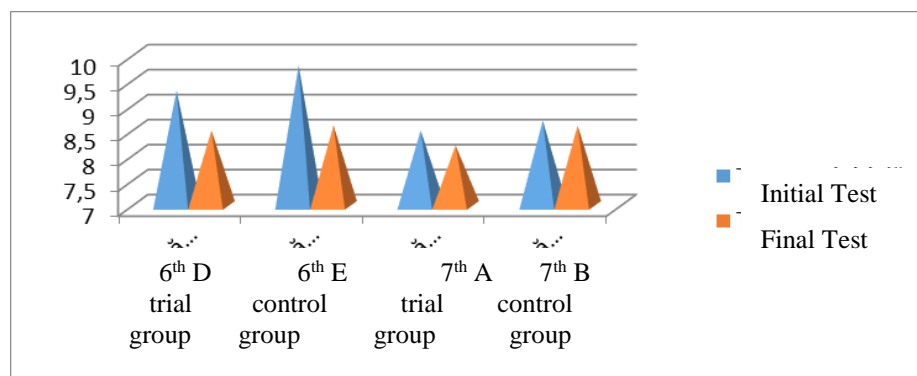
The results of the final test show an increase of motor qualities by testing speed running on a 50 m track, standing long jump and throwing the oina ball. After the initial and final tests, the results for both groups were organized in tables for each test, as well as the arithmetic mean and the signification of the differences between the means (table 1, figure 1).

Table 1. Speed running results

No.	Class	Subjects	Initial Test	Final Test	Progress
1.	6 th D (trial group)	24	9'03	8'5	<i>0,53</i>

2.	6 th E (control group)	24	9''08	8''6	<i>0,48</i>
3.	7 th A (trial group)	26	8''5	8''2	<i>3</i>
4.	7 th B (control group)	26	8''7	8''6	<i>2</i>

Figure 1. Results obtained at speed running



In the final tests, both the trial and the control groups obtained superior results compared to the initial tests, 6th D trial class achieving a 8''5 mean, 6th E control class a 8''6 mean, 7th A trial class a 8''2 mean and 7th B control class a 8''6 mean, proving that the methods used during the experiment were effective. Furthermore, it can be noted that both trial classes where track and field applicative activities where employed throughout the year showed a slight increase in performance when compared to their respective control classes. To sum it up, the use of track and field applicative activities during PE classes can bring a slight increase in performance, as can be inferred from the difference between the results of the two groups after the speed running test.

Table 2. Endurance running results

No.	Class	Subjects	Initial Test	Final Test	Progress
1.	6th D (trial group)	24	3,29	3,15	<i>0,14</i>
2.	6th E (control group)	24	3,27	3,17	<i>0,10</i>
3.	7th A (trial group)	26	4,43	4,36	<i>0,7</i>
4.	7th B (control group)	26	4,48	4,42	<i>0,6</i>

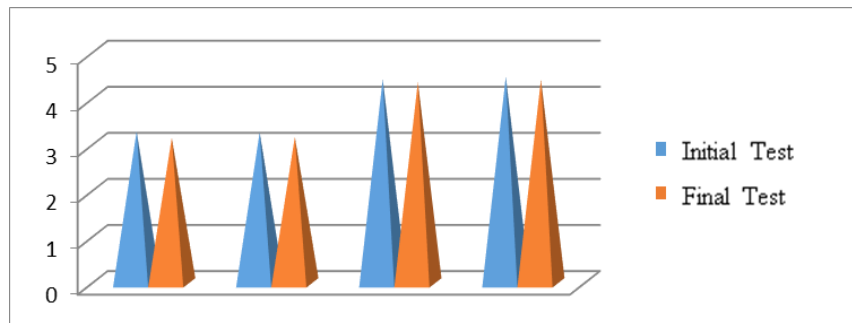


Figure 2. Results obtained at endurance running

The data in the above table shows that the results for the endurance running test were as follows: 6th D trial class – 3,15; 6th E control class – 3,17; 7th A trial class – 4,36 and 7th B control class – 4,42. An increase in performance from the initial to the final test can be observed, confirming that the methods used for the control classes and the track and field applicative activities used for the trial classes were effective. The results for the final test of the trial group were higher than those of the control group, proving that the use of track and field applicative activities during PE classes leads to an increase in the students' performance.

Table 3. Throwing the oina ball results

No.	Class	Subjects	Initial Test	Final Test	Observations
1.	6th D (trial group)	24	21,05 m	24,31 m	3,26
2.	6th E (control group)	24	20,26 m	23,20 m	2,94
3.	7th A (trial group)	26	24,74 m	25,30 m	0,56
4.	7th B (control group)	26	23,54 m	23,91 m	0,43

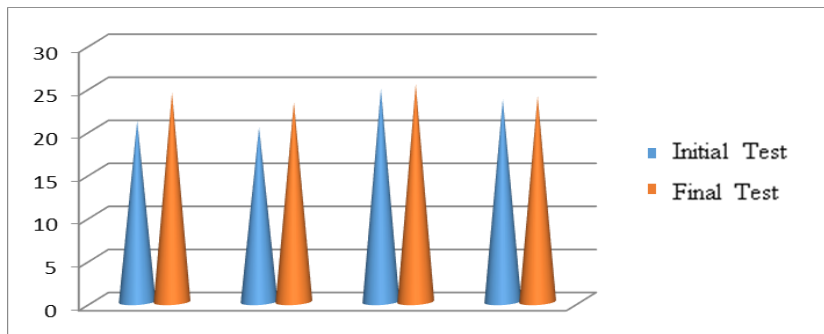


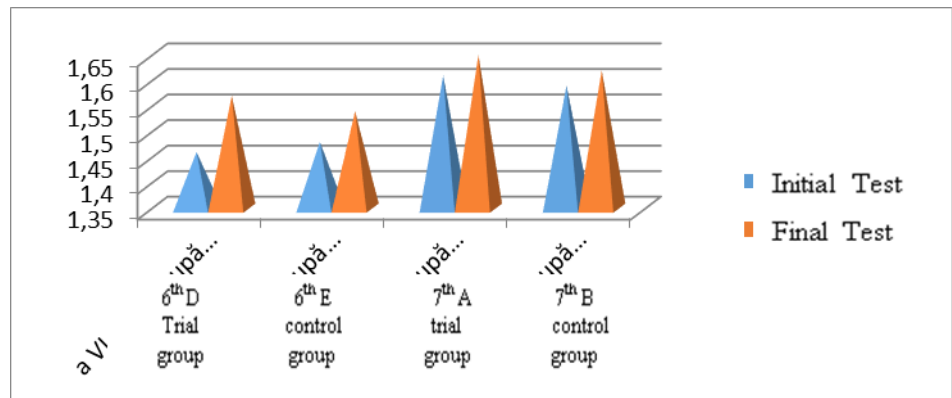
Figure 3. Results obtained at throwing the oina ball

At the final test in June, the throwing of the oina ball test, the results were higher than those of the initial, as shown in the above table. For the 6th grade, the mean results were, for the trial class, 24, 31 and, for the control class, 23,20. To be noted is the fact that the results of the trial class improved from the initial test to the final test by 3,26 m, while that of the control class by 2,94 m, showing that using track and field applicative activities during the PE class brought an increase in the students' performance. For the 7th grade, the mean result of the trial class was 25,30 and that of the control class 23,91. Again, an increase from the initial to the final test can be observed. Furthermore, the results obtained by the trial class show that track and field applicative activities were effective during the experiment.

Table 4. Standing long jump results

No.	Class	Subjects	Initial Test	Final Test	Observations
1.	6th D (trial group)	24	1,46 m	1,57 m	<i>0,11</i>
2.	6th E (control group)	24	1,48 m	1,54 m	<i>0,06</i>
3.	7th A (trial group)	26	1,61 m	1,65 m	<i>4</i>
4.	7th B (control group)	26	1,59 m	1,62 m	<i>3</i>

Figure 4. Results obtained at standing long jump



For the final test, the results improved for both the trial and the control groups, the means being, for the 6th D trial class 1,57, for the 6th E control class 1,54, for the 7th A trial class 1,62 and for the 7th B control class 1,59. Again, these results show that the methods used during the experiment were effective.

Finally, the results of all four tests show a progress of the trial group, confirming the fact that the use of track and field applicative activities throughout the school year leads to an increase in students' performance, to the development of their general motor capacity, to the development of personality traits, that they raise the interest for dynamicity through their attractiveness for students, develop and stimulate intellectual activities such as thought, imagination, reason, attention and memory and influence beneficially the students' health.

Conclusion

The experiments took place during the 2016-2017 school year, when, during the PE classes 2-3 topics regarding the development of motor qualities, the forming and improvement of motor habits particular to curriculums for 6th and 7th grades. As it can be inferred from the hypothesis of this study, the use of track and field applicative activities during all PE classes leads to an improvement in motor capacity, ensure harmonious physical development and the acquisition of motor skills and habits for the 6th D and 7th A trial classes. Using track and field applicative activities during PE classes helps to attract students and to ensure that they participate with greater interest and motor disposition.

Following the experiment, the results of the trial group confirm the hypothesis of this study, the motor capacity can be improved by use

of track and field applicative activities during the PE class and put forward that these should be employed more frequently therein.

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STUDIU PRIVIND CONTRIBUȚIA PARCURSURIILOR APLICATIVE LA PERFEȚIONAREA CAPACITĂȚII MOTRICE A ELEVILOR DIN CICLUL GIMNAZIAL ÎN LECȚIA DE EDUCAȚIE FIZICĂ

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Cuvinte cheie: capacitate motrică, educație fizică, parcururi aplicative.

Rezumat: Parcururile aplicative, la ciclul gimnazial, dinamizează activitatea, captează interesul elevilor, oferând posibilitatea de-a consolida și aplica în condiții variate a celor învățate. În cercetare am plecat de la ipoteza, că folosind ștafetele și parcururile aplicative în cadrul lecțiilor de educație fizică, pe întregul an școlar, se va obține o îmbunătățire în dezvoltarea capacității motrice ale elevilor, asigurarea dezvoltării fizice armonioase și însușirea priceperilor și deprinderilor

motrice utile în activitatea de zi cu zi și cele necesare performanțelor sportive. Cercetarea a fost realizată pornind de la respectarea întocmai a sarcinilor propuse la școala Liceul Tehnologic „Mihai Eminescu” Dumbrăveni, județul Suceava, la nivelul claselor a VI și a VII-a mixte. Orele de educație fizică s-au desfășurat atât în sala de sport cât și pe terenul de sport din incinta școlii. la toate cele patru probe de control se poate observa un progres a grupei experiment, ceea ce confirmă faptul că folosirea parcurșurile aplicative pe parcursul anului școlar duce la o creștere a performanței în rândul elevilor. În urma experimentului, rezultatele grupelor experiment demonstrează că ipoteza acestei lucrări a fost confirmată, capacitatea motrică poate fi perfecționată prin folosirea parcurșurilor aplicative în lecția de educație fizică, și propun folosirea parcurșurilor aplicative mai des în cadrul orelor de educație fizică.