

Shaping based development of physical activity among high school girls

Fomentar el desarrollo basado en la actividad física entre las jóvenes de secundaria

Irina M. VOROTILKINA [1](#); Olga V. ANOKHINA [1](#); Sergey V. GALITSYN [2](#); Larisa V. BYANKINA [3](#); Dmitriy V. CHILIGIN [2](#)

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ABSTRACT:

Strengthening of health, increase the physical activity and motivation to the healthy lifestyle among the young generation are priorities in modern society. Solutions to these problems have been suggested in many studies which proved that physical activity of the child is a natural need for movement. The satisfaction of movement is a stimulus for the development of the basic structures and functions of the body, as well as physical education. Physical education courses for girls have certain peculiarities. First and foremost, they must spark interest and enhance functional capacity. The article describes the implementation of health-improving body shaping courses as a system of physical exercises, which includes not only aerobic-oriented exercise, but selective exercises aimed at the development of individual body parts or body functions. The authors proved the effectiveness of the proposed program based on the method of collective pedagogical co-creation as a major general pedagogical approach. The essence of this approach consists in joint creative activities of teacher and pupils. The specific teaching methods used in the research included: musical interpretation method (selection of supporting music);

RESUMEN:

para el estilo de vida saludable entre la generación joven son prioridades en la sociedad moderna. En muchos estudios se han sugerido soluciones a estos problemas que demuestran que la actividad física del niño es una necesidad natural de movimiento. La satisfacción del movimiento es un estímulo para el desarrollo de las estructuras y funciones básicas del cuerpo, así como la educación física. Los cursos de educación física para las niñas tienen ciertas peculiaridades. En primer lugar, deben despertar el interés y mejorar la capacidad funcional. El artículo describe la implementación de cursos de formación del cuerpo que mejoran la salud como un sistema de ejercicios físicos, que incluye no sólo ejercicios aeróbicos, sino ejercicios selectivos dirigidos al desarrollo de partes individuales del cuerpo o funciones corporales. Los autores demostraron la eficacia del programa propuesto sobre la base del método de co-creación pedagógica colectiva como un enfoque pedagógico general mayor. La esencia de este enfoque consiste en actividades creativas conjuntas de maestros y alumnos. Los métodos de enseñanza específicos utilizados en la investigación incluyeron: método de

amplification method (competent selection of exercises based on their affordability); similarity method; "blocks" method (association of previously learned exercises into the dance cross-cuts); and the "California style" technique. It is proved that such activities not only increase aerobic capacity and endurance level, but also enhance the physical condition of the girls involved in the study.

Keywords: physical activity, physical education, shaping.

interpretación musical (selección de música de apoyo); Método de amplificación (selección competente de ejercicios basados en su asequibilidad); Método de similitud; Método de "bloques" (asociación de ejercicios previamente aprendidos en los cortes transversales de baile); Y la técnica del "estilo de California". Está demostrado que estas actividades no sólo aumentan la capacidad aeróbica y el nivel de resistencia, sino que también mejoran la condición física de las niñas participantes en el estudio.

Palabras clave: actividad física, educación física, formación.

1. Introduction

In modern society with its technological progress and economic development, the research works directed on strengthening of health, increase physical activity and motivation to healthy way of life are of particular relevance. Physical activity is an essential component of human lifestyle and behavior. It is determined by the organization of physical education as well as human individual and psycho-physical features. Physical activity at an early age is of particular importance. In studies of V. Scheid and R. Prohl (1986) it is noted that the early stimulation of motor activity of young children has a positive effect on the psychophysical development of the child (Scheid and Prohl 1986). Moving actively, the child adapts to the environment and explores the world. His physical activity is a natural need for movement, whose satisfaction is a stimulus for the development of the basic structures and functions of the body, as well as physical education. Research findings of teachers, psychologists, philosophers, physiologists, and hygienists indicate a lack in physical activity of children. The literature has accumulated a significant number of facts which testify that a lack of physical activity negatively affects the physical condition (slowed growth, reduced resistance against infectious diseases, etc.), mental health, and leads to delayed development of motor skills ((Amosov and Bendet, 1989; Byankin and Byankina 2016; Mogilev 2014; Torre 1995; Trilles and Junqua 1990/1991). Though, we should warn against excessive physical activity that leads to functional changes in the cardiovascular system of children.

2. Analysis of scientific methodical literature

Analysis of special scientific-methodical literature showed that each age period of human development is characterized by particular manifestations of physical activity which depends on both social factors, and biological and individual characteristics of the person. According to experts, the increased mode of physical activity has a multilateral health effects on the child's body: it develops the muscular system, central nervous system, physical system, strengthens and improves physiological function of the body, ensures the absorption by a child of movements affordable to his age; strengthens the need for movement, and increases physical performance. Wolanski N. and A. Sintarska (1986) note that ontogenesis of movements development is characterized by staging, the indicators formation and improvement process is quite long, though it can be significantly intensified through physical training. In the absence of physical activity, physical activity indicators, which have reached their development apogee, rapidly regress with age. The review of examined authors show that regular physical activity leads to increased oxygen supply to vital organs, prevents the risk of cardiovascular disease and muscle weakness, promotes a healthy lifestyle. Kaminska K. and B. Woynarowska (Kaminska and Woynarowska 1986) determined that the age of 6 years is characterized by development of sexual dimorphism in locomotor activity of children, which is manifested in the much greater involvement of boys in the high intensity movements. Dabrowska N. (1986) revealed the effect of sport training on cognitive and motivational processes in pupils. When assessing the level of aspirations, self-esteem, self-criticism and motivation, the author revealed also that the level of cognitive-motivational processes in children involved in sports

was higher that determined the greater realizability in achieving their goals. Physical activity has a positive effect in the case that it is organized taking into account children's age and individual differences (Byankin and Byankina 2016; Vorotilkina 2011; Vorotilkina 2011a; Kemper, Mechelen, and Twisk, 1994; Trilles and Junqua 1990/1991).

According to practices, the formation of physical activity one should start from school. It is no secret that the increase in physical activity, strengthening and maintaining the health in pupils is the most important task of education, while physical education should be a means of its solution. The education process in Russia is becoming a risk factor, whereas human health, especially the younger generation, is related to priority areas of state policy in the field of education. It is necessary to change the old approaches in solving health care problems, trace and implement new directions, focused on the formation of strong motivation and value orientations in children and adolescents towards physical culture and sports, and therefore increase their physical activity. Based on the Concept of development of educational content in the field of physical education (2001), we can note that the framework of education in physical culture is physical activity that promotes the development and improvement of human physical nature. Currently, there are quite many authorial programs for high school, in which the authors try to solve the tasks assigned to the "Physical Culture" educational area. Thus, for example, the authorial program of physical education under the guidance of Dr. V.I. Lyakh at first glance addresses given problem. But this is not the case, since high school girls are reluctant to develop and improve their motor skills, as the lessons are more like training for service in the military forces of Russia. Minor use of the rhythmic gymnastics and aerobics elements at lessons do not spark interest to the classes, and thus girls seek out reasons for not attending the physical culture classes. Our observations show that girls experience a decrease in the motivation to curricular pursuits and as a result the decline in total motor score. This is because the female body has its own physiological characteristics and needs special approach. It is therefore necessary to implement modern wellness techniques in educational process that promote not only the development and improvement of motor skills and qualities, but also heighten interest in physical education classes. The physical culture program based on aerobics fitness for 8–11 grade pupils (author O.S. Slutsker (2011)) could attract the girls by its novelty. Though, the testing of this program showed that the proposed physical load does not correspond to the particular trained group, since 62% of girls participating in the test, referred to the physical education class with reduced exercise load. At the same time, according to the Federal State Educational Standards (FSES), a priority task of educational area such as "Physical Culture", is strengthening the health of pupils, improving functionality of their organism, and developing basic physical qualities. Modern wellness techniques could become the means to solve this task with regard to high school girls. Shaping is one such area that can be used at physical education classes at the high school.

Shaping is a system of health-improving physical exercises, which includes not only aerobic-oriented exercises, but also selected exercises aimed at the development of individual body parts or body functions. Shaping allows correcting the body, as well as reducing and maintaining normal body weight, and that is what attracts the girls and allows sparking their interest in active physical exercises. The simplicity of the used exercises, moderate pace of execution, rest and recovery pauses allow differentiating the load, making such classes available for girls of different physical fitness and medical groups. Kriuchek E.S. (2001) suggests a shaping training methodology (Kryuchek 2001). This kind of physical training is attractive for girls, as it is of dancing nature. This is a great means for versatile physical development, allowing girls to develop physical qualities, form motor skills, as well contribute to the physical correction of body and physical activity. The development of motor skills and physical activity are closely linked. Systematic development and implementation of new movements is accompanied by improvement of motor skills.

Doing shaping at the physical education classes, we simultaneously solve the range of various problems.

Educational objectives:

- studying theory of physical education, anatomy, and physiology;
- acquiring the skill of using the training diary.

Recreative objectives:

- developing and improving motor skills and qualities;
- acquiring motor experiences by means of learning new motor actions.

Educational objectives:

- reinforcing need for a regular independent physical training;
- reinforcing motivation to healthy way of life.

Implementing the set tasks, we rely on the following principles:

General pedagogical principles:

1. *The availability principle* implies the optimal matching of pupils' capabilities with the set tasks and the used means and methods.
2. *The clarity principle* allows conducting classes using a wide range of visibility, which is implemented through visual, sound and physical forms.
3. *The conscience and activity principle* creates a need and strong interest to knowledge as well as enhances the motivation to self-shaping lessons.
4. *The regularity principle*, which implies the periodicity and continuity of the lessons.

Specific principles:

1. *The variability principle* includes conditions for solution of motor tasks and their content to achieve maximum results.
2. *The principle of developmental effects* is based on continuity and repeatability of pedagogical practices in the wake of rising functional capabilities of pupil's organism.
3. *The principle of conformity* contains targeted pedagogical practices and individual approach in development of physical abilities.

While conducting physical training classes we use modern music. The efficiency and attractiveness of the classes largely depend on music. Music rhythm organizes movement and improves mood. Music is also used as a factor in learning, because movements performed to rhythmic music, easier to remember. When performing dance practice, positive emotions affect neuro-psychological tone that in turn affects heart rate. We use shaping exercises not only in individual classes but in separate parts of the tutoring session. For example: when doing gymnastics, shaping exercises can be used in the preparatory part of the session as warming and preparative practices. During the track and field athletics classes (long-distance and middle range running), these exercises are used in the final part of the session as relaxing and recuperative practices. Carrying out shaping in the main part of the session we can correct body shape, train certain muscle groups, and improve motor skills. According to FSES, weekly duration of fitness is 3 hours. This is enough for those who start doing shaping, though to achieve visible success, we conduct extra classes outside school hours (2 hours per week). This allows the girls to maintain body shape all the time and increases motivation for exercises.

When planning shaping exercises for the high school girls, we take into account the nature and frequency of functional change, which are responsible for a reorganization of the major body systems. Since shaping classes affect the body of those doing comprehensive exercises, they can be used to develop motor skills based on individual physiological characteristics of girls. These human abilities are based on physical qualities such as endurance, strength, speed, agility, coordination, and flexibility. These qualities contribute to the development of the following physical conditions: power, speed, speed and power, coordination, general and specific

endurance. Besides, development of motor skills is influenced by psychodynamic inclinations (character, temperament, peculiarities of mental regulation and self-regulation, etc.) Rational organization of classes contributes to increase in motor scores. We track motor capability indicators through monitoring. Monitoring is needed to adjust individual load and tracking development of motor skills. It helps to solve a number of complex pedagogic tasks: identifying the development level of conditional and coordination skills, as well as allows assessing the quality of technical and tactical training. Monitoring helps exercising objective control over the physical development of girls substantiating physical condition standards (age related and individual norms). The main objectives of the monitoring include the following: training girls to determine the level of physical development and physical fitness; developing motivation to further improving their physical condition (shape); forming skills to determine and track changes in the development level of motor abilities. This testing contributes to the interest of girls in physical exercises since testing allows tracking though small but individual progress. Control tests can be carried out once a quarter. Testing involves the following areas: definition of moving abilities based on the results of the shuttle run (3x10m); determination of speed and power conditions based on the result of the standing long jump; and motor-coordination conditions defined in terms of body flexibility (forward bend from a sitting position); general endurance can be tracked by analyzing the running indicators on 1000 m. The test results are recorded in special tables.

3. Organization and research methods

In order to demonstrate the effectiveness of shaping classes to increase the level of development of motor conditions, we conducted the experimental study. The aim of this study was proving the validity of shaping at physical culture classes in high school girls to improve their motor condition performance. To achieve this goal we set the following tasks:

- identifying the causes of insufficient development of motor conditions;
- defining the teacher's activity towards elimination of the identified causes;
- developing shaping based course scheduling and lesson plan;
- conducting comparative testing of motor condition indicators.

The experimental work was conducted during two years at the municipal budgetary general education institution "Secondary General School No. 10" (Korolev, Moscow Region). The study involved 55 girls of grades 10-11, who were divided into two groups: A – control group (n=27); and B – experimental group (n=28). The study of the dynamics of development of motor condition performance and improvement of motor activity was conducted employing testing methodologies. The obtained data were recorded, processed by mathematical statistics techniques (Student's T-Test, Wight's T-criterion, etc.), and analyzed (Zheleznyak and Petrov 2009). In the preparatory work we used survey method to identify individual problems associated with the development of motor conditions. When determining the scope of the work, we decided to use shaping as the underlying basis for the development of motor conditions. It is a modern form of motor activity with a dance focus, which is characterized by the presence of the aerobic part that supports cardiorespiratory system at a certain level. In addition, the shaping helps to develop the psychomotor function (speed and accuracy of movement). The simplicity of the applied exercises, moderate pace of execution, rest and recovery pauses, allow differentiating the load, making such classes available for girls with different physical fitness from different medical groups, and allow developing physical conditions more effectively.

Continuing the work on development of physical qualities in girls of group B, we used both the general pedagogical and specific methods. Among the general pedagogical methods we should highlight the method of collective pedagogical co-creation, which consists in its essence in joint creative activities of teacher and pupils. The main parameters of pedagogical interaction include: interrelation, mutual acceptance, mutual support, trust, etc. Consistent application of the teacher collaboration method at the shaping classes results in the following: openness in

pedagogical communication; trust based training; demonstrativeness; the ability to build educational dialogue logically properly; autonomy of trainees, the ability to make responsible decisions; creativity, and the ability to creatively overcome complicated teaching objectives. Specific teaching methods include: musical interpretation method (selection of supporting music); amplification method (competent selection of exercises based on their affordability); similarity method; "blocks" method (association of previously learned exercises into the dance cross-cuts); and the "California style" technique. Shaping exercises require musical accompaniment. Music largely influences the efficiency and attractiveness of shaping classes. Supporting music is used as a factor of learning, since movements that are performed to rhythmic music, easier to remember. Musical rhythm organizes the movement and improves mood. Positive emotions evoke the desire to perform the movements more vigorously that increases their effects on the body, contributes to the performance capability as well as health improvement and active rest. Music gives the girls a high emotional charge that beneficially affects the mental condition.

Based on shaping, we have developed course scheduling and lesson plan for two years.

4. Results and discussion

According to the developed schedule, control group A was engaged in the usual program (Lyakh V.I., Course scheduling for the "Comprehensive physical education program for pupils of 1-11 grades") (Lyakh and Zdanevich 2010); while experimental group B was engaged in the developed shaping based course scheduling and lesson plan.

At the preparatory stage at the beginning of the school year, girls were surveyed to identify the reasons for insufficient development of physical conditions. According to the survey, we have obtained the following results:

- 12% do not believe that the development of physical conditions is a necessity;
- 26% are embarrassed to exercise because of the inability to properly perform a motor actions;
- 5% are afraid to look "funny";
- 19% are ashamed of their appearance;
- 38% believe that the development of physical conditions is prevented by excess weight.

These results are due to the fact that the school curriculum in physical education, although aimed at the development of physical conditions, does not take into account individual psychological and physiological development of pupils. Also these curricula lack theoretical information that would allow developing health culture and increase mental strength. Next, we conducted a survey which contained questions associated with physical activity in day mode.

The next stage consisted in the initial testing in both groups to determine the initial level of physical condition. We identified 4 major groups: speed group, speed and power group, locomotor and coordination group, and general endurance group. For definition of indicators we carried out the following tests:

- shuttle run 3x10 m (sec);
- standing long jump (cm);
- forward bend sitting on the floor (cm);
- 1000 m run (min/sec).

To carry out comparative analysis, testing of the girls was conducted at the end of each quarter. The test results were recorded in tables for further monitoring. Monitoring is necessary to adjust individual loads and monitor the development of physical conditions. It helps to solve a number of complex pedagogic tasks: identifying the level of development of conditional and coordination skills, as well as allows assessing the quality of technical and tactical training. It

allows also adjusting the load based on individual psychological and physiological characteristics of girls to better achieve the set results. Comparative monitoring of the physical conditions development promotes interest of girls to shaping lessons in particular and to physical exercise in general, as it helps tracking though small but individual progress.

5. Conclusion

Analyzing data of the comparative monitoring conducted at the beginning and the end of the research, we have received the following average growth indicators of the physical condition in control group A: moving abilities increased by 8%; speed and power conditions – by 5%, dorsal spine mobility – by 12%, and endurance – by 3%. Similar indicators in tested group B were as follows: 10, 6, 16, and 8%, respectively. Comparing obtained data we can conclude that the shaping classes in high school girls allow developing motor skills and physical qualities, increasing interest in physical exercises and give theoretical information necessary for independent physical training. These exercises not only increase aerobic capacity and level of endurance, but also physical conditions that contribute to the development of physical qualities and increase girls' growing power.

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1. Sholom-Aleichem Priamursky State University, 679015, Russia, Birobidzhan, Shirokaya Street, 70a

2. Far Eastern State Academy of Physical Culture, 680028, Russia, Khabarovsk, Amursky Bulevard, 1

3. Far Eastern State Academy of Physical Culture, 680028, Russia, Khabarovsk, Amursky Bulevard, 1. Email: larisa.byankina@gmail.com

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