

19th PCSF 2019

Professional Culture of the Specialist of the Future

FORMATION OF VALUE-BASED ATTITUDE TOWARDS PHYSICAL EDUCATION IN TEENAGERS

Valentina Dolgova (a)*, Natalia Mamylna (b), Olga Kondratieva (c), Alexey Bogachev (d)
*Corresponding author

(a) South Ural State Humanitarian Pedagogical University, 69 Lenin prospect, Chelyabinsk, Russia, 23a12@list.ru

(b) South Ural State Humanitarian Pedagogical University, 69 Lenin prospect, Chelyabinsk, Russia,
mamylna71@mail.ru

(c) South Ural State Humanitarian Pedagogical University, 69 Lenin prospect, Chelyabinsk, Russia,
oca74@yandex.ru

(d) South Ural State Humanitarian Pedagogical University, 69 Lenin prospect, Chelyabinsk, Russia,
bogachevan@cspu.ru

Abstract

Physical education is a special educational process that involves the biological, psychological and social nature of a child. Thus, it is essential to form a value-based attitude towards physical education, especially taking into account individual-typological characteristics of children. The purpose of the study was to form a value-based attitude towards physical education in schoolchildren in the framework of a specially created programme. We used *Belov's temperamental identification questionnaire*, Rokeach value survey, *ratio level of values and accessibility technique by E.B. Fantalova*, and *Schwartz value survey*. We conducted a *test of general physical fitness of schoolchildren* (standing long jumps, sit-ups, push-ups (girls); pull-ups (boys); 30-meters dashes, shuttle runs 3x10m, seated forward bends). Statistical processing was performed in Excel 2000 and STATISTICA 8.0. with the use of Student's t-test for dependent and independent samples. When calculating arithmetic mean, data was considered credible at $p < 0.05$. The study was conducted in the Chelyabinsk school No. 103 (N=50). A programme of value-based attitude formation towards physical education considering individual-typological approach was developed. The identified improvements in physical fitness among the schoolchildren of the pilot group in comparison with the control group in the course of an academic year show the efficiency of the physical fitness programme that considers the individual-typological approach to children with emphasis on the formation of a value-based attitude towards physical education.

© 2019 Published by Future Academy www.FutureAcademy.org.UK

Keywords: Physical education, values, individual-typological characteristics, teenagers, general physical fitness, development programmet.



1. Introduction

A development of the human body is a result of a complex interaction of its organs and systems with each other and with the environment (Gavrilov et al., 2018; Gorelik, Belyayev, Filippova, & Chumakov, 2018; Lobova, Mironov, Mishchenko, & Gilmanov, 2019). Physical activity is crucial for the maintenance of an inner environment as it balances out external and internal stimuli (Cherepov, Kalugina, & Khafizova, 2019; Kakhnovich, Izvekov, & Izvekov, 2019; Pakhomova, Petrenko, Klimova, & Mironova, 2018). At the current stage of the development of society the framing and addressing of objectives of schoolchildren's physical education in the real educational and teaching process should be specified according to age peculiarities, the content of educational material, and stages of training and education (Boshkova, & Bykov, 2018; Dolgova, Kutepova, Kryzhanovskaya, Bolshakova, & Tulkibaeva, 2018; Wentzel, Russell, & Baker, 2016).

Physical Education is one of the core subjects at school. Its purpose is to develop and improve physical qualities in schoolchildren (Fyodorov, & Erlich, 2016; Óscar, Celina, & Jesús, 2018; Leontyeva, Ermakov, & Arkhipova, 2018), and to help them with an impartial assessment of their personal physical fitness.

To form a value-based attitude towards anything it is necessary for an individual to first see the value, learn more about it and realise its significance (Dolgova et al., 2018; Zhakupova, Dolgova, Kondratieva, Kapitanets, & Nurtdinova, 2018a; 2018b). In the study we used sociological terms, for example, system of values, as well as axiological terms (Beal, Grimm, Dorn, & Susman, 2016; Kandler, Gottschling, & Spinath, 2016; Knight, Mahrer, Carlo, & Davis, 2016). Axiology is an independent study and has its own categories and concepts. Basic axiological categories and concepts constitute a precise and internally consistent system including such terms as a value, a value-based attitude, a system of values, value-based self-determination, etc.

A system of values is one of the major personal entities that expresses an individual's awareness of social reality, motivates an individual's behaviour and significantly influences all aspects of an individual's activities (Bong, Hwang, Noh, & Kim, 2014; Oyserman, Destin, & Novin, 2015).

2. Problem Statement

The study of the formation of a value-based attitude towards physical education in teenagers was motivated by its social importance and the necessity to create optimal conditions for personal fulfilment in life.

3. Research Questions

The research questions concern possible changes in physical fitness among the schoolchildren of a pilot group in comparison with a control group in the course of an academic year as a result of the implementation of a physical fitness programme introducing the individual-typological approach to children with emphasis on the formation of a value-based attitude towards physical education.

4. Purpose of the Study

The purpose of the study was to form a value-based attitude towards physical education in schoolchildren in the framework of a specially created programme.

5. Research Methods

We used a set of methods to study temperamental identification (Zabrodin & Pakhalyan, 2015; Zagvyazinskiy, 2008), including a questionnaire by A. Belov. A number of «+» chosen for every temperamental type was calculated. First block of questions described a phlegmatic temperament, second - melancholic, third - choleric, forth - sanguine. Then we calculated a percent of «+» for each temperamental type (a number of «+» for one type was divided by a number of «+» for all types and multiplied by 100%). In its final form the equation for a temperament looked approximately like $T = 36\%C + 35\%S + 15\%P + 14\%M$, which means that the temperament under study was 36% choleric, 35% sanguine, 15% phlegmatic and 14% melancholic.

Then we applied the Rokeach value survey based on the direct ranking of values. Many researches doubt the reliability of the method, as its result heavily depends on the adequacy of a subject's self-evaluation, thus it is advised to support the collected data with other methods. M. Rokeach recognises two groups of values: terminal - a belief that the ultimate goal of an individual existence is worth pursuing, and instrumental – a belief that a certain mode of action or personal attribute is preferable in any given situation. This classification corresponds to a conventional categorization into target values and means values.

We supported the data collected with this method with two other methods: a ratio level of values and accessibility technique by E.B. Fantalova and Schwartz value survey.

Fantalova's technique concerns 12 main universal human values and calculates the ratio of such psychological measurements, as Value (V) and Accessibility (A) of all 12 values for an individual. The test is designed to detect disagreement and disintegration in a personal and motivational sphere, and estimate a level of dissatisfaction with the current life situation, a level of internal conflicts, a level of blocking of the basic needs, and a level of self-realisation, integratedness and harmony.

Schwartz value survey helped children understand characteristic aspects of their value-motivational sphere to make a precise and conscious decision about their future profession. The survey consisted of two parts; the first part was designed to study values, ideals and beliefs that influence an individual. It included a list of 57 nouns and adjectives. A subject assessed each value on a scale from 7 to -1. The second part was a personality profile composed of 40 descriptions of a person related to 10 types of values. A subject assessed them on a scale from 4 to -1.

A test of the general physical fitness of schoolchildren was also conducted. Physical Education includes diagnostic testing of children's physical fitness. Our testing consisted of standing long jumps, sit-ups for 30 seconds, push-ups (girls); pull-ups (boys); 30-meters dashes, shuttle runs 3x10m, and seated forward bends.

General methods of *mathematical statistics* described in professional literature were used to analyse the collected data (Sidorenko, 2003). Statistical processing was performed in Excel 2000 and STATISTICA

8.0. with the use of Student's t-test for dependent and independent samples. When calculating arithmetic mean, data was considered credible at $p < 0.05$.

The study was conducted in the Chelyabinsk school No. 103. It involved 50 schoolchildren of the seventh grade, including 26 boys and 24 girls (13-14 years of age), which were divided into the pilot group and the control group (25 children in each). All children were healthy and attended general Physical Education classes.

During an academic year the control group (CG) followed the general programme of Physical Education.

For the pilot group (PG) we developed a programme of value-based attitude formation towards physical education considering individual-typological approach.

For each type of temperament a set of general physical exercises was prepared that was further improved with each class. The set consisted of shoulder girdle, back, abdominal, and thigh exercises.

In total we included 22 exercises which are generally used at Physical Education during warm-ups or the main part.

1). Burpee - easy to perform. Begin in a prone position. Do a push-up and pull your knees to your chest into squat position. Jump straight up as high as possible with hands above the head and clap. *The exercise is performed as fast as possible* with maximum intensity and inclusion of all possible muscles;

2). Mountain climber - start in a plank position; put straight arms and legs shoulder-width apart, support the weight of your body with palms and feet tips. Keep your abdominal muscles pulled in and your body straight. On the exhale, pull your knee into your chest using your abdominal muscles, keep your back straight. On the inhale, push your leg back, and pull the other knee into the chest using the same form. Breath steadily. Start slowly, then increase the speed gradually.

3). Squats. Keep your weight on the balls of your feet. Push your thighs back and down as if you are sitting down on a chair. Keep your head, shoulders and back straight. Push your knees out slightly.

4). Lunges. Do 3 sets of 10-15 repetitions. Stand tall with feet hip-width apart and legs slightly bent. Hold a hand weight in each hand. Take a big step forward with right leg and start to shift weight forward so heel hits the floor first. Stay in this position. Both legs should be at a right angle. Keep the left knee off the ground. Press into right heel to drive back up to starting position. Repeat.

5). Side lunges. Start standing with legs slightly wider than shoulder-width apart and toes pointed forward. Step to the side and sit down. Keep the support leg straight. Press its inner arch of the foot to the ground. Extend through the working leg to return to a standing position and repeat with the other leg.

6). Bench step-ups. Start in front of a bench with your shoulders slightly pulled back. Step up on to the bench with a working leg. Use the leg to push your body on to the bench. You may put the other leg on the bench, but strengthening the knee joint increases the load on it, so keep your working leg slightly bent. Step back down to the starting position.

7). Hanging leg raises. Hang from a chin-up bar with both legs straight down. On the inhale, pull your knees to the chest. On the exhale, slowly go back to the starting position.

8). Sit-ups. Begin with lying with your back on the floor, hands behind the head and the knees bent. Lift your torso up as close to your thighs as possible, then return to the starting position.

9). Shuttle run, 3x10m. Put one leg forward to serve as a centre of gravity to balance your weight. Keeping the quadriceps muscles of the support leg tense, slightly bend forward with a straight back. Start fast to get to the first line in minimum time. Keep increasing your speed until the last line and finish with maximum acceleration.

10). Jump squats. Stand tall with your feet hip-width apart. You may cross hands at chest height. On the inhale, perform a squat until your thighs are parallel to the floor or lower depending on your physical abilities. On the exhale, press your feet down to explode off the floor and jump as high as you can. Return to a squat when you land. Repeat the steps.

11). Push-ups. Get on the floor on all fours, keep your arms straight. Keep your body in a straight line from head to toe. Keep your feet close together. Position your hands shoulder-width apart or slightly wider. Inhale, slowly bend your elbows and lower yourself. Stay for a moment at the lowest point, then push back up to start. Exhale and repeat the exercise.

12). Knee push-ups (girls). Start with your hands and knees on the ground. Bend your elbows and lower your chest to the ground, then return to the starting position.

13). Scissors. Start with lying on your back with arms next to side and palms facing down. Raise your legs until the angle is 60 degrees or higher if possible. Keep your lower back pressed into the mat. Then raise your lower back and position your feet above your head. Place your hands on your lower back for support. On the inhale, slowly lower your right leg down toward the ground. On the exhale, lift your right leg back up and lower your left leg. Repeat 10 times.

14). Bench dips. Begin with sitting on a bench looking away from it. Hold on to the bench on its edge with the hands fully extended, separated at shoulder-width with palms down, fingertips pointing forward. Extend the legs forward and perpendicular to your torso. Keep your back straight. On the inhale, slowly lower your body by bending at the elbows until the angle is 90 degrees. Forearms should always be pointing down. On the exhale, lift yourself back to the starting position. Use only your triceps to bring your torso up again.

15). Elbow planks. Start face down on the floor resting on your elbows. Keep your back straight, abdominal muscles tense, and buttocks down. Stay in the position for the specified time. Keep the feet together as it makes balancing harder and puts more pressure on the abdominal muscles. Keep your legs straight and tense. A faulty position of legs reduces the pressure on the abdominals, which in turn has a negative effect on the lower back. Keep your buttocks tense and your back flat: do not bend and do not round it. Keep your lower back straight and your abdominals tight. Breathe steadily. Be sure to keep your shoulders directly in line with your elbows to prevent any additional pressure.

16). Jump rope. Hold the jump rope in front of you at a thigh or waist height, palms facing inwards. Keep your knees slightly bent at all times and jump on the balls of your feet. Maintain a tall, neutral spine and keep your abdominals tense. Do not jump too high, a few inches is perfect for intensive training.

17). Leg lifts. Begin with lying on your back. Keep your back firmly pressed down against the floor. Place your hands on the floor beside you or behind the head. Keep your knees locked throughout the exercise. Try not to lift your head. Raise your legs off the ground until the angle is 45–60 degrees, hold for 1–2 seconds and return to starting position.

18). Reverse boat pose. Lie on the stomach, stretch your arms forward shoulder-width apart with palms facing down. Straighten your legs shoulder-width apart. Lift your arms and legs off the floor simultaneously. Keep your legs and arms fully extended and straight for 7-10 seconds.

19). Bicycle. Start with lying flat on the floor or a mat. Put your hands behind your head and bend your knees at a 45-degree angle. Keep your lower back firmly pressed down against the floor to lessen additional load on the spine. Lift your legs and start going through a cycle pedal motion. During the exercise move your legs slightly up and down to increase movement amplitude and use more muscles, including postural muscles. Bring your knees in towards your chest. Slightly turn your upper body to one side trying to touch your knee with the opposite elbow.

20). Raised leg crunches. Lie down on your back firmly pressing your lower back against the floor. Cross your arms over your chest or put your arms along your sides. Cross your ankles. Slightly bend your knees and lift your legs until your thighs are perpendicular to the floor and your lower legs are parallel to the floor. This is your starting position. Keeping your lower back firmly pressed against the floor, lift the upper body by tensing abdominal muscles. On the exhale, slowly return to the starting position.

21). Shoulder bridge. Begin by lying on the back with your arms along your sides, your knees bent and your feet flat. Press into your feet and shoulder blades and start lifting your pelvis and hips, creating a straight line from knee to shoulder. On the exhale, extend one leg straight out. Keep the other leg on the floor. Try to hold the pose without rolling to a side. Slowly lower the leg down towards the ground. Repeat the exercise 3-5 times with both legs.

22). Wall sits. Lean against the wall. Keep your feet slightly wider than shoulder-width apart and about 20 cm from the wall. Keep your hands relaxed or cross them at a chest height. Take a deep breath and slide down the wall by bending your knees. Keep your back pressed against the wall at all times. Keep going down until your thighs are parallel to the ground. Imagine there is a chair behind you and you need to sit down on it. When your legs are bent at a right angle, hold the position. Slowly come back to the starting position

6. Findings

Characteristic aspects of the implemented programme of value-based attitude formation towards physical education considering individual-typological approach in an educational institution and family are (Churganov, Gavrilova, & Yakovlev, 2018; Rayzikh, Maksimova, & Alabuzhev, 2018; Beal, Grimm, Dorn, & Susman, 2016):

- each temperament is offered exercises which are most appropriate for its psychological features;
- individual and group methods of teaching or the circuit training method are applied.
- one of the goals is the formation of value-based attitude towards health and lifestyle in schoolchildren by transferring knowledge necessary for development of health-seeking attitude and health promotion;
- the programme contributes to developing important social skills in schoolchildren, which facilitate efficient social adaptation, prevention of addiction and deviant behaviour.

The objectives of the programme of value-based attitude formation towards physical education considering individual-typological approach were assigned according to the specialists' main findings (Song, Bong, Lee, & Kim, 2015):

1. Mass sports promotion through extracurricular activities.
2. Promotion of participation of children and their parents in mass participation sports events of all levels.
3. Formation of individual physical culture.
4. Implication of individual-typological approach in teaching Physical Education.
5. Complex development and improvement of schoolchildren's physical qualities.
6. Emotional strain and anxiety prevention in teenagers.

Implementation forms: in the course of studies; through extracurricular activities; outside school hours.

Implementation timeline: during an academic year.

The Physical Education syllabus in the course of studies is presented in Table 01.

Table 01. Approximate Physical Education syllabus

No.	Type of activity	1st term	2nd term	3rd term.	4th term	Total hours
1.	Athletics	14			14	28
2.	Skiing			20		20
3.	Games	13	21			34
4.	Gymnastics			10	10	20
5.	Total	27	21	30	24	102

Evaluation findings of individual-typological characteristics of secondary-school-age children.

Our studying of individual-typological characteristics of schoolchildren of the two groups resulted in the following output. Among the control group there were 4 choleric, 5 phlegmatic, 11 sanguine, and 5 melancholic. In the pilot group there were 3 choleric, 4 phlegmatic, 12 sanguine, and 6 melancholic.

Based on their temperaments, the children of the pilot group were given a set of exercises to perform in Physical Education classes and outside school hours.

In the pilot group we observed the change in the ranking of values according to the Rokeach method.

Terminal values describing their goals for an academic year changed their rankings in the following way: True Friendship dropped from the first place to the eighth, Social Recognition - from the second place to the tenth, A Comfortable Life - from the third place to the ninth, An Exciting Life - from the fifth place to the seventh; A Productive Life rose from the fourth place and ranked first, Health rose from the sixth place to the third, Mature Love - from the seventh place to the second, Personal Growth - from the eighth place to the fourth, An Interesting Job - from the ninth place to the seventh, A World of Beauty - from the tenth place to the sixth, Knowledge - from the eleventh place to the fifth, Wisdom - from the twelfth place to the eleventh.

Thus, at the end of the academic year all top six values were the most necessary ones for schoolchildren, in our view. What is more, such values as Health, Mature Love, A Productive Life, Personal Growth, Knowledge, and A World of Beauty gained more priority for the pilot group in the course of an academic year. The findings confirm the effectiveness of our value-based attitude formation programme.

Among the control group no significant changes in values in the course of an academic year were observed. The priority of such values as Mature Love, A World of Beauty, Knowledge, and Wisdom increased slightly.

Instrumental values changed their rankings in the following way: Obedience rose from the seventh place and ranked first, Self-Control - from the sixth place to the second, Responsibility - from the fifth place to the third, Politeness - from the eighth place to the fourth, Courage - from the ninth place to the fifth, Intellect - from the tenth place to the sixth, Logic - from the eleventh place to the seventh, Cleanliness - from the twelfth place to the ninth; Independence dropped from the first place to the eighth, Cheerfulness - from the second place to the tenth, Intransigence - from the third place to the eleventh, High Aspirations - from the fourth place to the twelfth.

It shows that among the pilot group at the end of the academic year all top six values were the most necessary ones for schoolchildren, in our view. Such values as Obedience, Self-Control, Responsibility, Politeness, and Courage gained more significance. The findings confirm the effectiveness of our programme.

Among the control group no significant changes in instrumental values in the course of an academic year were observed, except for Intransigence, that ranked higher at the end of the academic year.

The pilot group chose Knowledge, Personal Growth, Mature Love, A Productive Life, and True Friendship as six the most important terminal values. The control group chose Mature Love, A Productive Life, and A Comfortable Life.

For the pilot group such values as Wisdom, A Comfortable Live, and Social Recognition were of the least importance at the end of the academic year. We believe it is natural at a young age.

For the control group Wisdom, Knowledge, An Interesting Job, and Personal Growth were not significant at the end of the academic year. In our view, teachers and parents should take notice of the lack of motivation for learning and personal growth in this group.

The pilot group chose Courage, Self-Control, Politeness, Intellect, and Responsibility as six the most important instrumental values at the end of the academic year. The control group chose High Aspirations, Intransigence, Cheerfulness, and Courage.

For the pilot group such instrumental values as High Aspirations, Intransigence, Cheerfulness, Independence, and Cleanliness were least important at the end of the academic year.

For the control group Cleanliness, Obedience, Politeness, Logic, Intellect, and Responsibility were not significant at the end of the academic year. In our view, such findings indicate the necessity to change the attitude of this group towards life.

Therefore, the pilot group chose as the most important those values, which contribute to achievements of objectives, personal growth and improvement. It indicates the effectiveness of our programme of formation of a value-based attitude towards physical education in particular and general culture in general.

We observed the change in values among schoolchildren in the course of an academic year according to the Schwartz value survey.

At the end of the academic year, the rankings were the following: Power dropped from the first place to the tenth, Hedonism - from the second place to the fourth, Conformity - from the sixth place to the seventh;

Achievement rose from the fourth place to the first, Stimulation - from the tenth place to the ninth, Self-direction - from the fifth place to the third, Universalism - from the ninth place to the eighth, Benevolence - from the third place to the second, Tradition - from the seventh place to the sixth, Security - from the eighth place to the fifth.

The findings show the transition of the values we are interested in from the "not important" category to the "important" category in the pilot group at the end of the academic year. It indicated a positive outcome of the implementation of our programme of formation of a value-based attitude towards physical education.

At the end of the academic year, in the control group the rankings were the following: Power dropped from the first place to the third, Benevolence - from the third place to the fifth, Security - from the sixth place to the seventh; Achievement rose from the fourth place to the second, Hedonism - from the second place to the first, Self-direction - from the seventh place to the sixth, Tradition - from the fifth place to the fourth; Stimulation remained on the ninth place, Universalism - on the tenth place, Conformity - on the eighth place.

In the control group at the end of the academic year only slight changes were observed in the ranking of the values we are interested in. It indicates the consistency of values. Achievement and Self-direction gained more priority, which has positive significance for children of this age.

In comparison with the control group, the pilot group placed Achievement, Self-direction, and Benevolence higher at the end of the academic year. It indicated the effectiveness of our programme of formation of a value-based attitude towards physical education and culture in general.

Table 02 shows general physical fitness of the two groups in the course of an academic year according to control tests.

Table 02. General physical fitness tests - girls

Tests	Group			
	The control group		The pilot group	
	September	May	September	May
30-meter dash (seconds)	5.7±0.3	5.5±0.3 100%	5.8±0.2	5.0±0.2* 90.9%
Sit-ups in 60 seconds	23.2±2.1	31.4±2.3 100%	24.1±1.3	34.2±2.2* 108.9%
Push-ups	11.2±1.1	14.2±2.4 100%	11.9±0.9	16.3±2.2** 114.8%
Standing long jumps (cm)	159.5±7.3	167.6±4.2 100%	160.5±5.1	172.7±5.3 103.0%
Seated forward bends (cm)	12.3±0.9	15.3±2.3 100%	12.5±0.7	16.5±1.8* 107.8%
Shuttle run, 3x10m (seconds)	9.2±0.3	9.0±0.2 100%	9.1±0.2	8.7±0.2 96.7%

Remarks: p-value is statistical significance of the result differences in the pilot group at the end of the academic year, calculated with the Student's t-test. *- p<0.05; **- p<0.01.

As Table 02 illustrates, at the end of the academic year girls from the pilot group showed better results in comparison with the control group in the following tests: 30-meter dash - 9.1% (p<0.05); sit-ups

in 60 seconds - 8.9% ($p < 0.05$); push-ups - 4.8% ($p < 0.01$); standing long jumps - 3.0%; seated forward bends - 7.8% ($p < 0.05$); shuttle run 3x10m - 3.3%.

The set of exercises suggested by us is comprised of exercises which help make muscles stronger, more elastic and flexible, and develop evenly all muscle groups and physical qualities.

At the end of the academic year boys from the pilot group showed better results in comparison with the control group in the following tests: 30-meter dash - 10.9% ($p < 0.05$); sit-ups in 60 seconds - 8.4% ($p < 0.05$); push-ups - 29.2% ($p < 0.01$); standing long jumps - 3.8%; seated forward bends - 24.7% ($p < 0.01$); shuttle run 3x10m - 3.6% (table 3).

Table 03. General physical fitness tests - boys

Tests	Group			
	The control group		The pilot group	
	September	May	September	May
30-meter dash (seconds)	5.6±0.3	5.5±0.3 100%	5.4±0.2	4.9±0.3* 89.1%
Sit-ups in 60 seconds	35.5±1.3	39.4±2.2 100%	36.4±2.1	42.7±2.1* 108.4%
Pull-ups	5.2±0.2	7.2±0.3 100%	5.3±0.3	9.3±0.2** 129.2%
Standing long jumps	161.6±3.1	170.4±3.2 100%	162.7±3.6	176.8±3.2 103.8%
Seated forward bends (cm)	6.2±0.3	8.1±0.2 100%	6.5±0.3	10.1±0.8** 124.7%
Shuttle run, 3x10m (seconds)	8.7±0.2	8.4±0.3 100%	8.8±0.3	8.1±0.3 96.4%

Remarks: p-value is statistical significance of the result differences in the pilot group at the end of the academic year, calculated with the Student's t-test. *- $p < 0.05$; **- $p < 0.01$.

It is known, that general physical fitness promotes the full and harmonious physical development of a child (Rozek, Hyde, Svoboda, Harackiewicz, & Hulleman, 2015). The identified improvements in physical fitness among the schoolchildren of the pilot group in comparison with the control group in the course of an academic year show the efficiency of the implemented physical fitness programme that considers the individual-typological approach to children with emphasis on the formation of a value-based attitude towards physical education.

7. Conclusion

The study findings yielded some recommendations on the improvement of a value-based attitude towards physical education in teenagers:

1. The implementation of the individual-typological approach in Physical Education classes is necessary to provide schoolchildren with adequate physical activities. Teachers do not differentiate between children who attend sports clubs and children who have little experience in physical activity and health problems. Differences between their physical abilities are quite significant, however, they have to comply to the same standards. Monitoring of physical fitness progression in the course of studies needs to be implemented into the system of physical education, and assessments of athletic abilities need to be performed based on test results over the previous years.

2. It is necessary to take into account interests of schoolchildren when choosing exercises. Physical Education classes need to be carefully and purposefully designed and adapted to the interests of children of a specific school.

3. It is possible to use background music to make lessons more attractive and enjoyable.

4. It is crucial to develop a number of stimuli to enhance a value-based attitude towards achieving better results in physical fitness performance

Acknowledgments

The article is written in the framework of the Scientific and Methodological Foundations of Psychology and Management Technology of Innovative Educational Processes in the Changing World scientific project of the comprehensive plan of research, project and organizational activities of the research centre of Russian Academy of Education in the South Ural State Humanitarian Pedagogical University for 2018-2020 (Grant from the Mordovia State Pedagogical Institute named after M. E. Evseyev Grant theme: Personal resources for overcoming the development crisis by the subjects of the educational process (2019; head Dolgova V.I.).

References

- Beal, S. J., Grimm, K. J., Dorn, L. D., & Susman, E. J. (2016). Morningness–Eveningness and Physical Activity in Adolescent Girls: Menarche as a Transition Point. *Child Development*, 87(4), 1106-1114.
- Bong, M., Hwang, A., Noh, A., & Kim, S. (2014). Perfectionism and motivation of adolescents in academic Contexts. *Journal of Educational Psychology*, 106(3), 711-729.
- Boshkova, G. N., & Bykov, A. V. (2018). Metody vospitaniya moral'no-volevykh kachestv podrostkov v sporte. [Adolescents' willpower building methods in sports]. *Theory and Practice of Physical Culture*, 5, 41-43. [in Rus.]
- Cherepov, E. A., Kalugina, G. K., & Khafizova, A. S. (2019). Psikhologo-pedagogicheskoye obosnovaniye ponimaniya sportivnoy trenirovki kak potentsial'nogo vida vedushchey deyatel'nosti v podrostkovom vozraste. [Psychological and educatory service to facilitate sporting agenda formation in adolescents in sport training process]. *Theory and Practice of Physical Culture*, 2, 97-99. [in Rus.]
- Churganov, O. A., Gavrilova, E. A., & Yakovlev, Y. V. (2018). Motivatsiya k fizicheskoy aktivnosti detey shkol'nogo vozrasta cherez semeynyye traditsii. [Family traditions to motivate schoolchildren for physical activity]. *Theory and Practice of Physical Culture*, 10, 65-66. [in Rus.]
- Dolgova, V. I., Kryzhanovskaya, N. V., Rokitskaya, Y. A. Salamatov, A. A., Nurtdinova, A. A., & Zhakupova, Y. T. (2018). Interpersonal problems of younger adolescents. *Espacios*, 39(5), 28.
- Dolgova, V. I., Kutepova, N. G., Kryzhanovskaya, N. V., Bolshakova, Z. M., & Tulkibaeva, N. N. (2018). Relationship between teachers' readiness for innovative activities and their creative potential and professional characteristics. *Espacios*, 39(5), 31.
- Fyodorov, A., & Erlikh, V. (2016). Health behavioral factors in modern adolescents. *Journal of Physical Education and Sport*, 16(1), 109-112.
- Gavrilov, D. N., Antipova, E. V., Malinin, A. V., Pukhov, D. N., Matochkina, A. I., & Savenko, M. A. (2018). Fizicheskaya aktivnost i ee vliyaniye na zdorovye shkol'nikov. [Physical activity and its impact on the health of schoolchildren]. *Theory and Practice of Physical Culture*, 11, 44-47. [in Rus.]
- Gorelik, V. V., Belyayev, V. S., Filippova, S. N., & Chumakov, B. N. (2018). Osobennosti psikhofiziologicheskoy adaptatsii uchaschikhsya 11-16 let k uchebnym i fizicheskim nagruzkam, determinirovannyye tipami ikh vegetativnoy regulyatsii. [Peculiarities of the psychophysiological adaptation of pupils aged 11-16 years to educational and physical loads determined by the types of

- their vegetative regulation]. *Human. Sport. Medicine*, 18(1), 20-32. <https://doi.org/10.14529/hsm180102> [in Rus.]
- Kakhnovich, S. V., Izvekov, V. V., & Izvekov, K. V. (2019). Fizicheskaya kul'tura v tselostnom protsesse formirovaniya lichnosti. [Role of physical education in personality development process]. *Theory and Practice of Physical Culture*, 2, 52-53. [in Rus.]
- Kandler, C., Gottschling, J., & Spinath, F. M. (2016). Genetic and Environmental Parent-Child Transmission of Value Orientations: An Extended Twin Family Study. *Child Development*, 87(1), 270-284.
- Knight, G. P., Mahrer, N. E., Carlo, G., & Davis, A. N. (2016). The Socialization of Culturally Related Values and Prosocial Tendencies Among Mexican-American Adolescents. *Child Development*, 87(6), 1758-1771.
- Leontyeva, M. S., Ermakov, V. A., & Arkhipova, S. A. (2018). Obosnovaniye printsipov postroyeniya tekhnologii fizicheskogo vospitaniya detey-sirot. [Underage orphans' physical education technology design concepts]. *Theory and Practice of Physical Culture*, 8, 38-39. [in Rus.]
- Lobova, V. A., Mironov, A. V., Mishchenko, V. A., & Gilmanov, S. A. (2019). Zdorovye, fizicheskaya aktivnost i psikhologicheskiy status podrostkov korennoy i nekorennoy naseleniya severa Sibiri. [Rating physical activity versus physical and mental health of indigenous and migrant junior population of north of Siberia]. *Theory and Practice of Physical Culture*, 2, 32-34. [in Rus.]
- Óscar, C. B., Celina, S. G., & Jesús, R. M. P. (2018). Service-learning as a new methodological teaching trend in physical education and sport sciences. *Journal of physical education and sport*, 18, 335-341.
- Oyserman, D., Destin, M., & Novin, S. (2015). The context-sensitive future self: possible selves motivate in context, not otherwise. *Self and identity*, 14(2), 173-188. <https://doi.org/10.1080/15298868.2014.965733>
- Pakhomova, L. E., Petrenko, O. V., Klimova, V. K., & Mironova, T. A. (2018). Vliyaniye fizicheskoy aktivnosti na sostoyaniye zdorovia i individual'noye kachestvo zhizni shkol'nikov. [Physical activity benefits for schoolchildren's health and life quality]. *Theory and Practice of Physical Culture*, 7, 45-47. [in Rus.]
- Rayzikh, A. A., Maksimova, S. S., & Alabuzhev, A. E. (2018). Sovremennyye podkhody v organizatsii vserossiyskoy olimpiady shkol'nikov po predmetu "Fizicheskaya kul'tura". [Modern competitive process design and management concepts for all-Russian school physical education olympiad]. *Theory and Practice of Physical Culture*, 12, 23-25. [in Rus.]
- Rozek, C. S., Hyde, J. S., Svoboda, R. C., Harackiewicz, J. M., & Hulleman, C. S. (2015). Gender differences in the effects of a utility-value intervention to help parents motivate adolescents in mathematics and science. *Journal of Educational Psychology*, 107(1), 195-206.
- Sidorenko, E. V. (2003). *Metody matematicheskoy obrabotki v psihologii. [Methods of mathematical processing of in psychology]*. Saint Petersburg: Speech. [in Rus.]
- Song, J., Bong, M., Lee, K., & Kim, S. I. (2015). Longitudinal investigation into the role of perceived social support in adolescents' academic motivation and achievement. *Journal of Educational Psychology*, 107(3), 821-841.
- Wentzel, K. R., Russell, S., & Baker, S. (2016). Emotional support and expectations from parents, teachers, and peers predict adolescent competence at school. *Journal of Educational Psychology*, 108(2), 242-255.
- Zabrodin, Y. M., & Pakhalyan, V. E. (2015). *Psikhodiagnostika: spravochnik. [Psychognosis: reference book]*. Saratov, Russia: Tertiary Education. [in Rus.]
- Zagvyazinskiy, V. I. (2008). *Metodologiya i metody psikhologo-pedagogicheskogo issledovaniya: ucheb. posobie. [Technique and methods of psycho-pedagogical research: study guide]*. Moscow: Academy. [in Rus.]
- Zhakupova, Y. T., Dolgova, V. I., Kondratieva, O. A., Kapitanets, E. G., & Nurtdinova, A. A. (2018a). Peculiarities of emotional and volitional component of creative giftedness of adolescents. *Espacios*, 39(21), 35.
- Zhakupova, Y. T., Dolgova, V. I., Kondratieva, O. A., Kapitanets, E. G., & Nurtdinova, A. A. (2018b). Particular qualities of intelligentcreative component of gifted adolescents. *Espacios*, 39(21), 34.