

Development of communicative competence in adolescents using physical education means and methods

ELENA ROMANOVA¹, MIKHAIL KOLOKOLTSEV², ANTON VOROZHEIKIN³, GALINA SAMOYLOVA⁴, DMITRY RADCHENKO⁵, ELENA SHIRSHOVA⁶, MAXIM GURYANOV⁷, SERGEY AGANOV⁸, NATALYA BALASHKEVICH⁹

¹ Department of Physical Education, Altai State University, Barnaul, RUSSIA

² Department of Physical Culture, Irkutsk National Research Technical University, Irkutsk, RUSSIA

³ Department of Information Technologies, Kaliningrad Institute of Management, RUSSIA

⁴ Department of Physical Culture, Siberian Federal University, Krasnoyarsk, RUSSIA

⁵ Department of Physical Culture and Health, Reshetnev Siberian State University of Science and Technology, Krasnoyarsk, RUSSIA

⁶ Department of Physical Education and Sports, Immanuel Kant Baltic Federal University, RUSSIA

⁷ Department of Physical Culture and Sport, Privolzhsky Research Medical University, RUSSIA

⁸ Department of Physical Training, GPS Emercom of Russia St. Petersburg University, RUSSIA

⁹ Department of Medical Education, Semey Medical University, Non-Commercial Joint-Stock Company, KAZAKHSTAN

Published online: September 30, 2022

(Accepted for publication September 15, 2022)

DOI:10.7752/jpes.2022.09258

Abstract:

The search for methods of increasing the level of communicative competence of schoolchildren by means of physical education is an important problem in pedagogy. The use of physical education methods for the development of communication qualities of secondary school children has not been sufficiently studied. *Purpose:* to develop and test a methodology in physical education classes to improve communicative competence in 13-14-year-old adolescents. *Materials and methods.* The study was conducted in the Siberian Federal District (Russia) in the 2020-2021 academic year among 60 children (13-14 years old) on the basis of a secondary school. Experimental (n = 30) and control groups (n = 30) were identified, in which 3 times a week physical education classes were conducted according to the curriculum of Lyakh (2012). For the experimental group, we developed a set of 49 tasks, where we used didactic games, the brainstorming method, discussions, a monologue, a way out of a problem situation, applied and social projects. In both groups, a milestone testing of the level of development of the communicative qualities of children was carried out using L. Michelson tests (Translation and adaptation by Yu.Z. Gilbukh); M. Snyder; V.V. Sinyavsky and B.A. Fedorishin. *Results.* At the end of the research project, the results of the children in the experimental group in all psychological tests and the increase in indicators were significantly greater than in the children in the control one (p < 0.05). At the end of the project, the results of the L. Michelson test showed that the number of children in EG with a competent type of response increased by 46.6%, children with a dependent type decreased by 44.3%, the aggressive type of response decreased by 2 times. According to the M. Snyder test, a higher level of social self-control was established in children of EG, compared with the results of children of CG. Analysis of the test results after the experiment using the methods of V. V. Sinyavsky and B. A. Fedorishin showed that there were no children with a low level of communication development in the experimental group, 30% of children in this group had average and above average, 26.7% of children had the highest level of development of communicative and organizational inclinations. *Conclusions.* The results of the experiment of increasing communicative competencies testify to a higher efficiency of the pedagogical method of physical education proposed by us in 13-14-year-old children.

Key Words: physical education, communicative competency, schoolchildren, psychological testing

Introduction

An important goal of modern education is children's communicative competence development in communicating with peers and adults in the process of various activities (Anokhina, 2011). Communication implies a person's willingness to integrate into society, to adequately determine their place and behavioral function in public life. A high level of communication abilities' development allows a person to easily adapt to a complex social environment and provides a favorable quality of life, which determines the practical significance of this competence (Polina, & Ovcharova, 2019). A decrease in a person's communication can lead to negative changes in mental health, especially at a young age. The lack of emotional and social communication skills, the presence of conflicts cause a high level of aggression and deformation of children's and adolescents' personality and the appearance of risky behavior (Martinek, & Hellison, 2016). A low level of communication skills can

cause a child to distrust other people, isolation, and a decrease in social responsibility, which negatively affects his/her personality (Teryushkova, 2016).

In recent years, the term «cybersocialization» has appeared, which reflects the level of communication in social networks (Hudimova, et al., 2021). On the one hand, social networks can have a positive impact on a person's communication and psychological security (Verduyn et al., 2017; Timnea et al., 2018). However, according to other authors, excessive use of virtual communication in social networks can lead to mental disorders (Hudimova, 2020). By David et al. (2018), Jones et al. (2018) it was found that excessive interest in virtual communication can lead to increased anxiety, depression, sleep disorders, social isolation, a decrease in self-esteem, deterioration of somatic and physical health. The negative impact of screen time spent at a computer or mobile device leads to a decrease in communication, physical activity and the quality of children's health, which is confirmed by the work of Valtonen et al. (2021). The results of studies by Xiang et al. (2020) and Schmidt et al. (2020) showed deterioration in athletes' physical and mental health during the restrictive measures associated with the coronavirus pandemic.

A person's communication competence develops through the acquisition of certain skills and abilities. The key methods of developing and improving communication are physical activity and human communication in physical education and sports (Yarmak et al., 2017; Cherepov et al., 2020; Magdich et al., 2021). This type of joint activity significantly develops motivation for communication, behavior self-control and forms relationships between people (Talaghir et al., 2018). The scientific literature (Raquel Pérez-Ordás et al., 2020) provides data on the use of means and methods of schoolchildren's physical education for personal and social competencies development. The research by Eganov et al. (2020) shows the relationship between the students' communicative competencies levels, the state of mental health and physical activity. The authors noted the high motivation and desire to engage in physical culture of girls with a high level of skills and abilities of collective communication and low aggressiveness.

There are experimental studies of scientists and specialists on the level of communication competence in various social groups of the population. Issues concerning the use of means and methods of physical education for adolescent children's communication qualities development remain insufficiently studied, which determined the relevance of the choice of the topic of our research work. We believe that the results of our research project will allow teachers and coaches at educational institutions using non-traditional pedagogical technologies of physical education to develop children's and adolescents' communication competence and improve their mental and physical health.

Purpose is to develop and test a methodology in physical education classes to improve communicative competence in 13-14-year-old adolescents.

Material & methods

On the basis of the secondary school (Siberian Federal District, Russia), a research project was conducted with 60 teenagers aged 13-14 (December 2020 - March 2021). The experimental (n=30) and control (n=30) groups were identified. In both groups, PE classes were conducted according to the Lyakh (2012) program three times a week for 45 minutes. For the experimental group, we have developed a variable program for the third PE lesson (49 tasks), which contributes to the communicative competencies formation. The duration of each task was 10-15 minutes. The main methods of the experimental project proposed by us were a pedagogical experiment to improve the children's of the experimental group communicative competencies using didactic games, «brainstorming», discussion, monologue, getting out of a problematic game and role-playing situation, applied and social projects. To complete the tasks in the lesson, EG children are divided into 2 teams according to the color of their sportswear. Table 1 shows examples of the use of means, methods and techniques of physical education for the development of the children's of the experimental group communication.

Table 1. Elements of the pedagogical program of the variable lesson of physical education of EG children

Methods	Lesson topic	Techniques	Communicative qualities
The method of explanation and display. Work in pairs and in a team (teamwork).	Marching exercises, development of motor qualities.	Lining-up into teams based on the color of sportswear.	Communicative cooperation with the teacher and peers.
	Push-ups.	Performance and team evaluation of physical exercise.	Ability to use monological form of speech. Joint motivation for success.
The method of cooperation. Working in groups.	Gymnastic etude with a ball in balance.	Come up with and present series for a gymnastic etude with a ball.	Proactive cooperation in the search and collection of information. Development of an alternative opinion.
Debates. Working in groups.	Pull-up on a high and low crossbar. Gymnastic etude with a ball in balance.	The first group proves that a gymnastic etude with a ball is a useful and beautiful element. The second group opposes that the gymnastic etude is traumatic.	Ability to use the dialogical form of speech. Managing emotions in communication with other people.

Creating a problem situation. Work in a team and in pairs.	Development of physical qualities. Rope climbing.	Teams are invited to determine physical qualities based on the sports shown in the pictures and give three examples of their own.	Partner behavior management – control, correction, evaluation of his actions. The ability to cooperate, provide assistance, work in pairs and in a team.
Reflection on the children's actions. Work in pairs.	Development of physical qualities.	Each pair performs five exercises to develop physical qualities.	Search for ways to interact with peers and a teacher.
«Brainstorming». Collective work in a team.	Exercises to develop flexibility.	The team needs to come up with and jointly perform two exercises to develop flexibility.	Conflict resolution. Proactive cooperation. Managing partner behavior.
Applied projects. Working in pairs.	Rope jumping.	Each pair of children presents their own version of morning gymnastics with a skipping rope.	Team interaction. The ability to agree on the distribution of functions and roles in joint activities.
Information and communication technology. Teamwork.	Rules of conduct and safety when performing physical exercises.	Discussion of a safety video for PE classes.	Proactive cooperation in decision-making and its implementation.
The game method. A social project. Teamwork.	Sports games and relay races.	The teams' presentation on the topic «Healthy lifestyle».	Cooperation in the search and collection of information. The ability to agree with another opinion. Self- and mutual control.

A high-stakes assessment of communicative competencies was carried out with the help of psychological tests:

1. L. Michelson's test (Translation and adaptation by Yu.Z. Gilbukh, 2022). Evaluates the level of communicative skills development when communicating children with peers and adults. The type of response to communication with other people (dependent, competent, aggressive) is determined by the magnitude of the points.

2. The test of social self-control by M. Snyder (Raygorodsky, 2011). Determines the level of a person's communicative control over their behavior in points: low (0-3 points), medium (4-6 points) and high (7-10 points).

3. The test of V. V. Sinyavsky and B. A. Fedorishin (Fetiskin et al., 2002). Determines the level of a person's communicative and organizational inclinations: low or receptive (1-4 points), below average or conformal (5-8 points), medium or reproductive (9-12 points), high or productive (13-17 points) and higher or creative (17-20 points). The choice of tests is due to their accessibility for children of this age, high validity, efficiency and reliability. The obtained data were processed by generally accepted parametric methods using the Statistica 6.1 software package. Parental consent was obtained for the participation of children in the project. In accordance with the directive of the Helsinki Declaration of 2008, the project carried out does not violate the legal basis of scientific research.

Results

The high-stakes psychological testing results of the CG and EG children are shown in Table 2.

Table 2. High-stakes indicators values of psychological tests of children in CG and EG, points (M±m)

#	Test	CG (n=30)		EG (n=30)	
		At the beginning of the project	At the end of the project	At the beginning of the project	At the end of the project
1	Communicative skills in communicating with others (L. Mikhelson)	1.5±0.2	2.3±0.8	1.6±0.3	3.3±1.1*
2	Social self-control (M. Snyder)	3.9±1.1	6.2±2.2	3.7±1.0	7.6±2.8*
3	Communicative and organizational inclinations (V. V. Sinyavsky and B. A. Fedorishin)	8.5±2.8	10.4±3.3	8.8±2.9	15.8±3.8*

Note.* the difference is significant ($p < 0.05$)

At the beginning of the pedagogical experiment, there were no significant differences between the values of indicators in all psychological tests of EG and CG children, $p > 0.05$. At the end of the research, positive dynamics of the results of psychological tests was established in both groups. A significant improvement in the values of test scores was noted only in children of the experimental group, $p < 0.05$. The increase in the values of the indicators of the tests of children of EG and CG at the end of the project is shown in Figure 1.

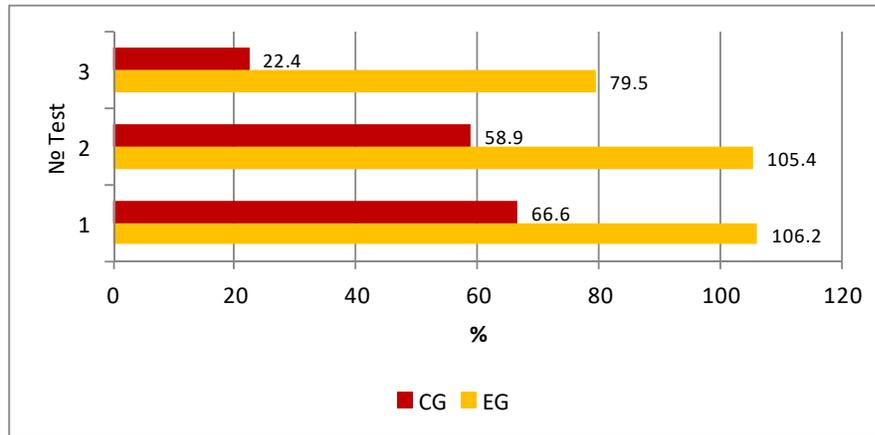


Fig. 1. The increase in the values of test scores in children in CG and EG at the end of the project

Analysis of the children's psychological testing results showed that at the end of the research project, the increase in the values of the indicators of all tests was significantly greater in children of the experimental group than in children of the control one, Figure 1. We processed and analyzed the high-stakes results of each test. At the beginning of the project, it was found that according to the results of L. Mikhelson's test, the number of children in each group with a certain type of response was approximately the same, Figure 2.

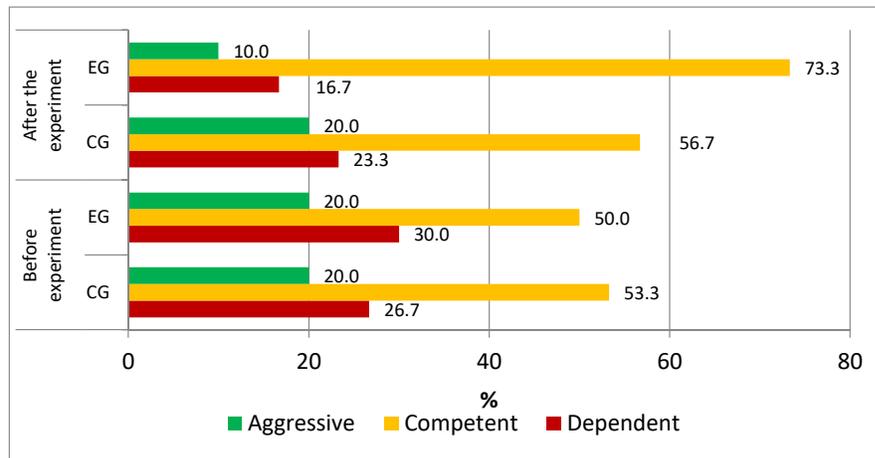


Fig. 2. The number of EG and CG children with different types of response at the beginning and end of the experiment

After the completion of the project, the number of children in the experimental group with a competent type of response increased by 46.6%, the number of children with a dependent type decreased by 44.3% and an aggressive type of response decreased by 2 times. At the end of the experiment, no significant changes in the type of response during communication were found in children of the control group. This indicates a more pronounced formation of basic communication skills in EG children.

This fact is confirmed by the results of the diagnosis of the EG children's communicative competence, obtained at the end of the experiment using other psychological tests. The analysis of the results of the M. Snyder's test indicates a higher level of social self-control in children of EG, compared with the results of children of CG, Table 3.

Table 3. The number of CG and EG children with different levels of social self-control before and after the experiment, %

Social self-control level	CG (n=30)		EG (n=30)	
	At the beginning of the project	At the end of the project	At the beginning of the project	At the end of the project
Low (0-3 points)	30.0	16.7	36.7	-
Average (4-6 points)	56.6	50.0	63.3	50.0
High (7-10 points)	13.4	33.3	-	50.0

Children with high social control constantly control their behavior and emotions, know where and how to behave in society. Children with low communicative competencies are direct and open and can be perceived by people around them as unnecessarily straightforward and intrusive. The results of the study of the communicative and organizational inclinations level (the test of V. V. Sinyavsky and B. A. Fedorishin) are shown in Table 4.

Table 4. The number of CG and EG children with different levels of communicative and organizational aptitudes before and after the experiment, %

Levels of communicative and organizational aptitudes	CG (n=30)		EG (n=30)	
	At the beginning of the project	At the end of the project	At the beginning of the project	At the end of the project
Receptive, 1-4 points	46.6	46.6	60.0	-
Conformal, 5-8 points	36.7	40.0	33.3	10.0
Reproductive, 9-12 points	16.7	13.4	6.7	33.3
Productive, 13-16 points	-	-	-	30.0
Creative, 17-20 points	-	-	-	26.7

At the beginning of the research project, children of both observation groups had predominantly receptive and conformal aptitudes' types, which is characterized by low and below average levels of communicative and organizational inclinations development. Such children do not seek to communicate, they are constrained, do not show initiative. Single children have a reproductive or medium type of communication. They have a pronounced desire for contacts with peers and adults. No children with productive and creative levels were identified.

At the end of the project, no significant positive dynamics of communicative competence was revealed in CG children. Most of the children still had low and below average levels of communication. No children with a receptive (low) level of communication development were identified in EG. More than 30% of EG children had reproductive (average) and productive (above average) types of development of communicative and organizational inclinations. More than a quarter of EG children (26.7%) had a creative (higher) level of development of communicative and organizational inclinations.

We believe that the use of the pedagogical methodology developed by us to increase the level of communicative competence development in the educational process of physical education of EG children has significantly increased the level of their communication, compared with CG children.

Dicussion

The development of communicative competence in school-age children is an important area of modern pedagogical science (Anokhina, 2011). The widespread development of new means of communication and the world globalization have significantly changed the social behavior of children and adolescents. Scientists register positive (Verduyn, et al., 2017; Timnea et al., 2018) and negative (Hudimova, 2020) effects of modern means of communication on the mental and physical health of the child. Low physical activity of children and adolescents associated with its neglect and restrictive measures in connection with the pandemic of coronavirus infection (Xiang et al., 2020; Schmidt et al., 2020), a great fascination of young people with various gadgets (Valtonen et al., 2021) and prolonged use of social networks reduce direct communication between peers and adults. It does not develop their communicative competence and in the future may lead to a deterioration in the quality of life, which was established by David et al. (2018) and Jones et al. (2018).

One of the sports pedagogy directions is the use of means and methods of physical education for the development of communication competence in children (Yarmak et al., 2017; Cherepov et al., 2020). However, the use of physical education for children's of secondary school age communication development has not been studied enough.

We found that at the beginning of the research project, children of CG and EG had communication competencies developed approximately equally, as evidenced by the results of the schoolchildren's testing. The use of the means and methods of physical education proposed by us in EG, aimed at improving the children's communication, has significantly improved their communicative competencies, which is consistent with the results of the Polina, Ovcharova (2019) study. The analysis of the results of L. Michelson's test at the end of the project indicates an increase in the indicators of psychological tests in EG children. The number of children with a competent type of communication has increased, which characterizes the ability of children to establish communication with peers and adults, the ability to adequately perceive the position of another person. The number of children with a dependent type of communication has decreased. In the experimental group, the number of children with aggressive behavior, which characterizes aggression towards other people, decreased by 2 times, it is especially relevant in the modern world (Martinek, & Hellison, 2016).

Our results of the M. Snyder's test at the end of the project indicate a higher level of social self-control of the EG children, compared with the results of the children in the CG. In our project, children with a high level

of social control also have high self-control of emotional behavior, unlike children with low communicative competencies, which does not contradict the conclusions of Raquel Pérez-Ordás et al. (2020). The authors found that the use of a program in the educational process of an educational institution to improve ethical behavior and human values through physical activity reduced aggressiveness and increased the social level of behavior of young people in Spain. The importance of self-control and responsibility for the behavior of young people is indicated by research by Richards, & Gordon (2016).

An analysis of the test results conducted by V. V. Sinyavsky and B. A. Fedorishin at the end of the project found that there are no children with a receptive (low) level of communication development in EG. Every third child has reproductive (average) and productive (above average) types of development of communicative and organizational inclinations. Such children began to feel more comfortable in an unfamiliar environment, to help people around them, to be distinguished by initiative in communication. Every fourth EG child has a creative (higher) level of development of communication and organizational inclinations. These children have become easy to navigate in difficult situations.

Thus, the problem of communicative competencies development in children is one of the significant areas of sports pedagogy and psychology (Eganov et al., 2020). Increasing the communication of children in society, allows improving mental health and their quality of life.

Conclusions

Improving the level of communicative competence and preserving the mental health of children and adolescents is one of the important pedagogical educational tasks of an educational institution. We have proposed a pedagogical program for improving the communicative competencies of children aged 13-14. For this purpose, the methodology of the educational process of physical education of children has been modernized. Pedagogical tools were used such as didactic games, the method of «brainstorming», discussions, monologue, creating a problem situation, performing applied and social projects.

It was found that at the end of our research the results of psychological testing of children in the experimental group and the increase in the values of indicators were significantly greater than in children of the control one ($p < 0.05$). EG children have increased motivation for the overall success of the team, agreement in opinion, desire to be an active participant in sports games. They have become more sociable, adequately perceive the opinion of the opposite side, are able to conduct a discussion and take the initiative in learning. These children have become less aggressive have a high level of self-control of behavior and well-developed organizational skills than the children of the control group.

The emergence of well-developed communication competencies of children in the experimental group indicates an improvement in their mental well-being and quality of life. We believe that the modernized set of tools and methods of physical education of children aged 13-14 has shown its effectiveness in improving the communicative competence of the child's personality compared with the methods of conducting classes according to the traditional educational program.

Conflicts of interest. The authors declare no conflict of interest.

References:

- Anokhina, N.V. (2011). Introduction of the Federal State Educational Standard in ungraded schools. *Bulletin of education*, 11, 51-58 (In Russian)
- Cherepov, E. A., Eganov, A. V., Aminova, A. S., & Savinykh, E. Yu. (2019). Socially significant values of students aimed at maintaining and promoting health. *Journal of Physical Education and Sport*, Vol. 19 (4), Art 380, pp. 2508-2511. DOI:10.7752/jpes.2019.04380
- David, J., Powless, M., Hyman, J., Purnell, D., Steinfeldt, J., & Fisher, S. (2018). College Student Athletes and Social Media: The Psychological Impacts of Twitter Use. *International Journal of Sport Communication*, 11, 1-24, DOI:10.1123/ijsc.2018-0044.
- Eganov, A., Cherepov, E., Romanova, L., & Bykov, V. (2020). Interpersonal communication of students and mental health data. *Journal of Physical Education and Sport*, Vol 20 (Supplement issue 4), Art 328, pp. 2405-2408. DOI:10.7752/jpes.2020.s4328
- Fetiskin, N.P., Kozlov, V.V., & Manuilov, G.M. (2002). Socio-psychological diagnostics of the development of personality and small groups. *Diagnostics of interpersonal relations*. Moscow, pp.167-171 (In Russian)
- Hudimova, A. Kh. (2020). Modern Adolescents' Psychological Well-being and Social Media Overload. *Vector of modern pedagogical and psychological science in Ukraine and EU countries: Collective monograph*, 1, 182-198. DOI:[10.30525/978-9934-588-37-2.1.11](https://doi.org/10.30525/978-9934-588-37-2.1.11)
- Hudimova, A., Popovych, I., Savchuk, O., Liashko, V., Pyslar, A., Hrys, A. (2021). Research on the relationship between excessive use of social media and young athletes' physical activity. *Journal of Physical Education and Sport*, Vol. 21 (issue 6), Art 456, pp. 3364 - 3373. DOI:10.7752/jpes.2021.06456

- Jones, J. J., Kirschen, G. W., Kancharla, S., & Hale, L. (2018). Association between latenight tweeting and nextday game performance among professional basketball players. *Sleep Health*, 5(1), 68-71. DOI:[10.1016/j.sleh.2018.09.005](https://doi.org/10.1016/j.sleh.2018.09.005)
- Lyakh, V.I. (2012). Physical Culture. Work programs. Grades 5-9: a manual for teachers of educational institutions. Moscow: Prosveshchenie. (In Russian)
- Magdich E. A., Khazova S. A., & Lyapin V. M. (2021). Design of recreational activities of teenagers going into sports. *Bulletin of the Adyghe State University. Series 3: Pedagogy and Psychology*, 4 (288), 108-115.
- Martinek, T., & Hellison, D. (2016). Teaching personal and social responsibility: Past, present and future. *J Phys Educ Recreat Dance*, 87(5), 9-13. DOI:10.1080/07303084.2016.1157382
- Michelson, L. (2022). Test of communication skills. Available at: <https://www.sites.google.com/site/test300m/tku> (accessed 24.08.2022) (In Russian)
- Polina, A.V., & Ovcharova, E.V. (2019). Features of communicative competence in adolescents in difficult situations. *World of Science. Pedagogy and psychology*, 4(7). Available at: <https://mir-nauki.com/PDF/38PSMN419.pdf> (accessed 24.08.2022) (in Russian)
- Raquel Pérez-Ordás, Pablo Pozo, Alberto Grao-Cruces (2020). Effects on aggression and social responsibility by teaching personal and social responsibility during physical education. *Journal of Physical Education and Sport*, Vol.20 (4), Art 248, pp. 1832 - 1838. DOI:10.7752/jpes.2020.04248
- Raygorodsky, D. Ya. (2011). Practical Psychodiagnostics. Moscow: Bahrakh-M., pp.558 (In Russian)
- Richards, K. A., & Gordon, B. (2016). Socialisation and learning to teach using the teaching personal and social responsibility approach. *Asia-Pacif J. Health, Sport Phys Educ.*, 8(1), 19-38. DOI:10.1080/18377122.2016.1272424
- Schmidt, S., Anedda, B., & Burchartz, A., et al. (2020). Physical activity and screen time of children and adolescents before and during the COVID-19 lockdown in Germany: a natural experiment. *Sci Rep*, 10, 21780
- Talaghir, L. G., Mocanu, G. D., Iconomescu, T. M., & Mîndrescu, V. (2018). Development of speed manifestation forms during physical education classes at university. *Human Sport Medicine*, 18(4), 95-102. DOI:10.14529/hsm180414
- Teryushkova, Yu.Yu. (2016). Communicative competence as a factor in the successful adaptation of students with disabilities. *Psychologist*, 6, 54-64. DOI:10.7256/2409-8701.2016.6.19806
- Timnea, A.C., Potop, L., Timnea, O.C., Potop, V., & Jurat, V. (2018). Physiological Features of Obesity in Children and Adolescents. *Journal of Physical Education and Sport*, 18 (Supplement issue 5), Art 332, pp. 2199 - 2206
- Valtonen, J., Kyhälä, A., & Reunamo, J. (2021). Recreational screen time, sedentary behavior, and moderate to vigorous physical activity in 11-year-old children. *Journal of Physical Education and Sport*, Vol. 21 (3), Art 197, pp. 1553 - 1560. DOI:10.7752/jpes.2021.03197
- Verduyn, P., Ybarra, O., Résibois, M., Jonides, J., & Kross, E. (2017). Do social network sites enhance or undermine subjective well-being? A critical review. *Social Issues and Policy Review*, 1, 274-302. DOI: 10.1111/sipr.12033
- Xiang, M., Zhang, Z., & Kuwaharab, K. (2020). Impact of COVID-19 pandemic on children and adolescents' lifestyle behavior larger than expected. *Prog Cardiovasc Dis.*, 63(4), 531-532
- Yarmak, O., Galan, Y., Hakman, A., Dotsyuk, L., Blagii, A., & Teslitskiy, Y. (2017). The use of modern means of health improving fitness during the process of physical education of student youth. *Journal of Physical Education and Sport*, Vol. 17(3), Art 189, pp. 1935-1940. DOI:10.7752/jpes.2017.03189.