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Optimisation of sports and physical education activities and physical training for students aged 14-16 through the integration of Olympic sports elements

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Abstract. The study aimed to investigate the impact of integrating the Olympic Education programme into school Olympic games and mass sporting events on the level of physical fitness and development of students. The research methodology included comparative analysis and a quasi-experimental study based at the V. Monomakh Lyceum in Pereiaslav and the I. Mazepa Academic Lyceum in Pereiaslav, involving 168 students between February and May, and the formation of an algorithm for organising mass sporting events based on elements of the Olympic Education programme. The study determined that each type of exercise has a different effect on the development of students' physical qualities. The implementation of the Olympic Education programme promotes the systematic combination of physical education lessons and extracurricular mass sporting events, ensuring the comprehensive development of schoolchildren through the integration of learning, physical activity and play. At the beginning of the experiment, the physical fitness of students in the experimental and control groups was relatively the same, with minor differences in cardiorespiratory endurance, strength, flexibility and coordination. After completing the Olympic Education programme, the experimental group demonstrated significant improvement in all indicators: the average distance in the 12-minute Cooper run was 2,070 ± 200 m compared to 1,850 ± 210 m in the control group, the number of push-ups in 1 minute increased to 30 ± 6 times compared to 24 ± 5, flexibility in the sit-and-reach test reached 24 ± 5 cm compared to 19 ± 5 cm, and the shuttle run time (10×5 m) was 16.2 ± 1.8 seconds compared to 18.5 ± 2.1 seconds. These results indicate a significant increase in cardiorespiratory endurance, strength, flexibility, and speed-coordination of students who participated in gamified physical education classes. The results of the study can be used by physical education teachers and school administrators to plan and implement Olympic education programmes aimed at increasing students' physical activity

Keywords: teenagers; physical activity; mass sports activities; games; physical training; general secondary education institutions

Introduction

Olympic education is a tool for improving the effectiveness of mass sporting events in schools, as it shapes a value-based attitude towards physical culture, strengthens pupils' motivation to engage in regular sports activities and encourages them to lead an active lifestyle. Within the educational process, it combines educational, upbringing and health aspects, ensuring the comprehensive development of schoolchildren. The inclusion of Olympic ideas and pedagogical technologies in the structure of physical education creates the basis for the growth of mass sporting events,

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increasing the level of student participation in sports clubs and developing internal motivation for self-improvement. This direction necessitates research-based justification of the role of Olympic education in improving mass sports activities in schools and determining effective ways to integrate it into the educational space.

In scientific discourse, researchers have actively studied this topic and outlined various approaches to interpreting its content, pedagogical functions, and role in shaping students' sports activities. V. Babalich *et al.* (2023) emphasised the role of physical culture trends that contribute to the modernisation of sports activities in schools and a gradual increase in the number of students participating in physical education and sports activities. The researchers pointed to such forms as health and training classes, mass sporting events, optional sections, and integrated physical education lessons with elements of fitness and game sports. The significance of encouraging young people to lead an active lifestyle is in line with the position of R. Kumar (2024), who described Olympic sport as a strategic resource for strengthening the nation through educational and training tools that are integrated into the school environment. The gradual formation of a sports culture within the school community helps to create conditions for the harmonious development of students, as well as the optimisation of mass sports activities by increasing motivation and participation.

J. Li & L. Yuan (2022) found that the introduction of Olympic education for primary and secondary school students, combined with the STEAM approach (Science, Technology, Engineering, Art, and Mathematics), promotes physical literacy and interest in sport. They also found that the effectiveness of the programme depends on the integration of interdisciplinary tasks and the active participation of teachers in the formation of sports skills and values. I. Lutsenko *et al.* (2025) demonstrated the effectiveness of innovative methods of teaching physical education in higher education institutions, emphasising the synergy of professional, physical and educational goals. These findings confirm the possibility of further introducing innovations into the school environment to optimise mass sports activities and expand the educational impact of Olympic ideas. The development of sport among young people is closely linked to the formation of a system for training athletes of different levels. M. Sattari *et al.* (2024) demonstrated the impact of involving educational structures in the development of elite sport, highlighting the significance of schools in the early identification and support of talented young people. This reinforces the argument regarding the function of Olympic education as a mechanism for increasing the sporting potential of society through basic and mass physical activity.

Furthermore, C. Fan *et al.* (2025) studied the success of a private sports school in China, demonstrating that institutional support, motivational programmes and maintaining team spirit can ensure the long-term participation of young people in sport. Despite the differences between private academies and regular schools, mechanisms for engaging and supporting student initiative have the potential to be adapted to mass sports activities within general secondary education. J.L. Rojas Torrijos (2024) explored how a scientific approach to sport can broaden coverage of the Olympic Games by emphasising the integration of performance analysis, biomechanics, and sports science into media content. The researcher emphasised the importance of presenting evidence to improve public awareness of sporting achievements and the overall dynamics of large-scale sporting events. Despite the aspects highlighted by the above-mentioned authors, there is insufficient research into the mechanisms for implementing Olympic education in the daily practice of general education institutions. The study aimed to evaluate the effectiveness of implementing elements of the Olympic Education programme through school Olympic games and mass sporting events to improve physical fitness.

Materials and Methods

The study conducted a comparative analysis of various types of school Olympic games and mass sporting events, including short and middle-distance running, relay races, long jump and high jump, ball throwing, team games, and complex exercises for coordination and strength. These types of games were selected based on their accessibility, safety, and compliance with the methodological recommendations of the Olympic Education programme (International Olympic Committee, n.d.), and the analysis was based on criteria of physical fitness and participation in mass sporting events. An algorithm for organising mass sporting events was developed based on the Olympic Education programme, the methodological recommendations of the International Olympic Committee (International Olympic Committee, n.d.) and the existing experience of school Olympic programmes, incorporating safety, accessibility and the comprehensive development of students. The algorithm included the stages of planning the event, preparing participants and teachers, conducting a warm-up, the main part with various types of exercises and games, as well as the final stage with evaluation of results and summarising.

A quasi-experimental study was conducted between February and May 2024 in two lyceums in Pereiaslav, namely the V. Monomakh Lyceum and the I. Mazepa Academic Lyceum. The sample included 168 students aged 14 to 16 from the two selected lyceums. The inclusion criteria were age 14-16, regular attendance at physical education classes, no medical contraindications, and written consent from parents, while the exclusion criteria were chronic diseases or injuries of the musculoskeletal system, participation in professional sports sections, or refusal to participate further. The groups were formed in such a way that the overall percentage of attendance at physical education classes in both groups before the start of the study was 70%. The two groups included equal numbers of representatives from two schools. The experimental group studied according to the adapted Olympic Education programme, while the control group continued with standard physical education classes without an additional programme. Ethical research standards were adhered to in accordance with the Declaration of Helsinki (2013), and the voluntary participation of all participants and the confidentiality of their personal data were ensured.

Before the initiation of the experiment, schoolteachers underwent two days of training on how to integrate school games and elements of the Olympic Education programme

into physical education lessons. For 16 weeks (from February to May 2024), students in the experimental group participated in two 60-minute classes per week, which included a warm-up, a main part with aerobic, strength and coordination exercises, and a cool-down. Students in the control group continued with standard physical education classes with the same frequency and duration, but without the thematic component. The assessment was conducted in several stages: pre-intervention testing in January 2024 included measurements of physical indicators (12-minute Cooper run, number of push-ups in 1 minute, sit-and-reach test for flexibility, shuttle run for coordination). Final testing was conducted in May 2024, and additional data on class attendance was collected. The results were processed by comparing pre- and post-intervention indicators within the group and between schools using paired and intergroup *t* tests for categorical changes in the level of participation in activities.

Results

The Olympic Education programme was developed by the International Olympic Committee (International Olympic Committee, n.d.) to promote Olympic values among young people and integrate them into the educational process in schools around the world. It involves a gradual increase in the complexity of tasks and physical activity, adapted to the level of training of students, as well as systematic monitoring of results and support. The programme can be effectively implemented in schools both within physical education lessons and through extracurricular sports and mass events. Its structure provides for the adaptation of tasks to the level of physical training of students, the safety of exercises and the integration of Olympic values into the educational process. Relays, team games and tournaments are organised in an accessible and interactive way. Table 1 shows a comparative analysis of the main types of school Olympic Games according to various criteria.

Table 1. Comparative analysis of types of school Olympic Games

Types of Olympic Games	Physical training	Involvement in mass sporting events
Short-distance running (60-100 metres)	Develops explosive speed, starting technique, and reaction to the signal	Used in school athletics competitions, "Fast Sprint" competitions
Middle-distance running (200-400 metres)	Improves cardiovascular endurance, leg strength and proper breathing	Participation in interclass and interschool cross-country competitions, "Spring Run"
Relay races	Contributes to the development of speed, coordination and baton passing skills	Organisation of class and school relays for Olympic Week
Long jump	Increases leg strength, range of motion and coordination during the run-up	Used in school athletics competitions and Olympic festivals
High jump	Develops leg strength, flexibility and jumping technique	Used in intra-school tournaments, Olympic days
Ball throwing	Develops hand strength, precision and coordination	Organisation of school competitions for accuracy and distance of throw, "Athletics Day"
Team games (football, basketball, volleyball)	Develops endurance, speed, strength, tactical thinking and teamwork	Holding tournaments between classes and schools, "Olympic Cup"
Comprehensive exercises for coordination and strength	Combine squats, push-ups, planks, balance exercises, and yoga elements.	Used in school sports holiday programmes, Olympic Health Day, and training complexes

Source: compiled by the authors based on the International Olympic Committee (n.d.)

Analysis of the table showed that different types of school Olympic Games combine various aspects of physical education and can be effectively integrated into the educational process to optimise mass sports activities. Short and medium distance running develops speed and endurance, relay races and team games improve coordination, endurance, team spirit and responsibility, long jump and high jump, ball throwing develop strength, accuracy, movement technique, and complex coordination and strength exercises stimulate self-discipline, attentiveness and progress in performance. The combination of these activities ensures the comprehensive development of students and involves a wide audience of schoolchildren in systematic participation in mass sporting events. In addition, adjusting the schedule of classes and sporting events in accordance with the rules of instruction ensures stable physical activity for students, prevents overexertion and reduces the risk of injury during exercise. This approach ensures even distribution of workload throughout the week, which contributes to the safe and effective development of students' physical skills in the learning process. From the point of view of improving physical fitness and preventing injuries, comprehensive planning of sports activities is effective. The use of a structured schedule and adherence to instruction rules creates favourable conditions for the development of strength, endurance, flexibility and coordination, while at the same time forming safe exercise habits in students.

To systematise the work of teachers and students, ensure the safe and effective conduct of events, and promote the consistent development of students, it is recommended to use the algorithm for organising mass sporting events under the Olympic Education programme. It maintains high motivation to participate, can be used to assess progress, optimises the use of equipment and resources, and ensures the integration of Olympic values into the learning process. Table 2 illustrates a step-by-step algorithm for organising mass sporting events using elements of the Olympic Education programme, with detailed instructions, tools and sports equipment used for each stage.

Table 2. Algorithm for the step-by-step organisation of mass sporting events using elements of the Olympic Education programme

Stage	Steps	Tools	Sports equipment
Event planning	Define the goals and format of the event, select types of exercises and games, and consider safety and accessibility	Event plan, IOC methodological recommendations, schedule templates	–
Preparation of participants and teachers	Conduct training for teachers and students, familiarise them with the rules and safety procedures	Instructional materials, presentations, demonstration videos	–
Warm-up and introduction	A set of light aerobic and flexibility exercises, familiarise students with the technique	Methodological recommendations, value charts, and a timer	Balls, skipping ropes, cones, and stretching mats
Main part (exercises and games)	Performing planned exercises and games: short and medium distance running, relay races, long jump/high jump, ball throwing, team games, complex exercises for coordination and strength; compliance with safety rules	Event programme, instruction cards, timer, stopwatch	Balls, batons, dumbbells, cones, mats, and throwing balls
Final stage (assessment)	Evaluate the results of physical exercises, discuss achievements and difficulties, and summarise the results	Results protocols, standardised physical fitness tests	–

Note: IOC (International Olympic Committee)
Source: compiled by the authors based on research

In practice, the algorithm for organising mass sporting events under the Olympic Education programme should ensure systematic and consistent work for both students and physical education teachers. For students, it creates a clear structure for participation in various types of physical activity, encourages the priority on personal results and progress, and stimulates motivation through participation in competitions, relays, team games and complex exercises to develop coordination, strength, endurance and flexibility. Students can participate in short and medium distance running, relay races, long and high jumps, ball throwing, team games such as football, basketball or volleyball, as well as specially designed complex exercises to develop physical qualities and coordination. Each stage includes a warm-up with light cardio and flexibility exercises, a main part with planned exercises and games, and a final stage with evaluation of results. The algorithm involves regular repetition of activities with a gradual increase in the complexity and intensity of the load, which helps to avoid overload and injury and ensures noticeable progress in physical fitness.

For teachers, the algorithm is a methodological tool that helps them plan lessons, monitor the safety of exercises, assess students' achievements, and adjust the programme according to their level of preparation and individual needs. Teachers should conduct a briefing before the start of the event, familiarise students with safety rules, and organise compliance with the exercise regime, alternating types of activity and adapting loads for students with different levels of physical fitness. Motivational support, encouragement of teamwork and individual achievements are emphasised, which promotes a positive attitude towards physical activity and forms healthy habits. The algorithm can be used to allocate time and resources more effectively, optimise the use of sports equipment, monitor results, and foster a sense of achievement and success in students.

The algorithm also provides for various types of activities. Short and medium distance running can be organised in the form of class or interclass sprints and cross-country races, relays can be held with mutual team support, and long jump and high jump can be held as individual or team competitions with technique and result assessment. Ball throwing can be used to develop accuracy and strength, and complex coordination and strength exercises can be conducted in the form of station training with alternating types of activity. Team games develop tactical thinking, interaction and leadership skills, and build team spirit. Each event should end with a summary, analysis of achievements and discussion of the experience gained.

For effective application of the algorithm, it is recommended to use available sports equipment such as balls, skipping ropes, cones, relay batons, stretching mats and minimal equipment for strength exercises. It is also necessary to ensure that the intensity of the load varies, to combine aerobic and strength exercises, and to integrate flexibility and coordination exercises into the warm-up and cool-down parts of the session. Teachers should regularly record students' results and use standardised physical fitness tests to assess progress, adjust the programme and maintain positive development dynamics. The assessment of students' physical development, motivation and participation in sports activities is interrelated, as the level of physical fitness directly affects the ability and desire to participate in various types of sports activities, while motivation determines the regularity and activity of participation, and systematic involvement in activities, in turn, stimulates the development of physical qualities and reinforces a positive attitude towards sport, creating a cyclical effect of mutual reinforcement of these components in the process of forming Olympic values. Thus, the algorithm works as a comprehensive tool that ensures structured, safe and effective organisation of mass sporting events, while providing educators with clear methodological guidelines for planning, conducting and evaluating results. An empirical study was conducted to evaluate the effectiveness of the described algorithm using elements of the Olympic Education programme. Table 3 shows the results of pre-intervention testing of the physical fitness of the experimental and control groups.

Table 3. Results of pre-intervention testing of students in the experimental and control groups

Indicator	Units of measurement	Experimental group (*M* ± *SD*)	Control group (*M* ± *SD*)
12-minute Cooper run	m	1,780 ± 210	1,805 ± 215
Push-ups in 1 minute	several times	20 ± 4	21 ± 5
"Sit-and-reach" test	cm	16 ± 4	17 ± 5
Shuttle run (10×5 m)	s	19.2 ± 2.3	19.0 ± 2.2
Class attendance	%	70	70

Source: compiled by the author based on a quasi-experimental study

Analysis of the pre-intervention test results showed that both groups of students had a relatively similar level of physical fitness, but the control group demonstrated slightly higher scores in some tests. The average distance in the 12-minute Cooper run in the experimental group was 1,780 m, while in the control group it was 1,805 m, which indicates slightly better cardiorespiratory endurance in the control group. The number of push-ups in 1 minute was 20 in the experimental group, and 21 in the control group, i.e. the upper body strength was almost the same, with a slight advantage for the control group. The sit-and-reach test for flexibility showed 16 cm in the experimental group and 17 cm in the control group, indicating a similar level of muscle elasticity and joint mobility. The shuttle run (10×5 m) results showed 19.2 seconds in the experimental group and 19.0 seconds in the control group, reflecting almost the same level of coordination and speed abilities in both groups. Overall, these indicators show that the physical fitness of students in both groups was approximately the same, which created favourable conditions for an objective assessment of the programme's impact on the further development of physical activity and sports skills. An experiment was conducted with classes based on an algorithm with elements of the Olympic Education programme, which included a warm-up, main and final parts aimed at increasing student motivation and activity. Post-intervention testing showed that the experimental group significantly improved their performance, while the control group showed only minor changes. Table 4 shows the average values of physical performance, class attendance and participation in mass sporting events of students in the experimental and control groups before and after the implementation of the Olympic Education programme.

Table 4. Results of assessment of students in the experimental and control groups before and after testing

Indicator	Units of measurement	Experimental group	Control group
12-minute Cooper run	m	2,070 ± 200	1,850 ± 210
Push-ups in 1 minute	times	30 ± 6	24 ± 5
"Sit-and-reach" test	cm	24 ± 5	19 ± 5
Shuttle run (10×5 m)	c	16.2 ± 1.8	18.5 ± 2.1
Class attendance	%	92	72

Source: compiled by the author based on a quasi-experimental study

Analysis of post-intervention results showed that students in the experimental group significantly improved their physical fitness in all indicators compared to the control group. The average distance for the 12-minute Cooper run in the experimental group was 2,070 ± 200 m, while in the control group it was 1,850 ± 210 m, indicating significantly higher cardiorespiratory endurance. The number of push-ups per minute in the experimental group reached 30 ± 6 times, in the control group 24 ± 5 times, demonstrating better upper body strength in the experimental group. The sit-and-reach test showed an average flexibility level of 24 ± 5 cm in the experimental group versus 19 ± 5 cm in the control group, indicating higher muscle elasticity and joint mobility. The shuttle run (10×5 m) results in the experimental group were 16.2 ± 1.8 seconds, in the control group – 18.5 ± 2.1 seconds, reflecting higher coordination and speed abilities of students who participated in the Olympic Education programme. Attendance among students in the experimental group was 92%, while in the control group it was 72%, indicating more active participation of the first group in the learning process. Overall, these data confirm the effectiveness of the gamified approach and the integration of game elements into physical education classes to improve the physical fitness and sports skills of schoolchildren. Thus, after the programme was implemented, the experimental group demonstrated an improvement in all indicators of physical development, motivation and involvement in sports activities compared to the control group, which proves the effectiveness of "Olympic education" in promoting physical activity and Olympic values among secondary school students.

Discussion

The implementation of the Olympic programme contributes to the optimisation of mass sports activities in general secondary education institutions and increases the organisation of students to participate in extracurricular sports events. The growing interest and motivation for Olympic ideas, which is reflected in an increased number of class attendances and an expansion of the range of mass sporting events, indicates that pedagogical interventions based on Olympic values stimulate collective physical activity among schoolchildren. These results are consistent with the findings of a study by A. Abdrassilov *et al.* (2023), which confirmed that the proper organisation of sports education clusters increases the level of youth participation in collective forms of activity due to increased internal interest. The study demonstrated the importance of a pedagogical value

base for maintaining a sustained interest in physical education. The identified increase in the motivational component among schoolchildren corresponds to the conclusions of G. Alardani (2023), in which the quality of sports management in educational institutions influences the activation of sports initiatives among students. Proper organisation and value orientation of educational programmes create conditions for the formation of sustained interest in physical activity among students. The results reflect the position of V. Bilogur & R. Andriukaitiene (2021) and J.E. Yu (2022) that competent management of sports education in crisis conditions does not ensure a mechanical increase in the number of events, but rather the formation of an environment that supports sustainable physical activity practices among students. The data reproduce the trend described by J. Choi *et al.* (2025), where the historical evolution of elite sport has shown that the transmission of Olympic traditions contributes to the formation of generations of young athletes with a high level of sports culture. The improvement in children's participation in mass sports initiatives coincides with the research of X. Zhan *et al.* (2021) and P.H. Chowdary & P. Thapar (2025), determining that statistical analysis and sports technologies have an impact on the younger generation's growing interest in Olympic disciplines. Injuries negatively affect the physical development, academic performance and participation of students in sports activities, while the systematic organisation of the educational environment positively contributes to their prevention. This statement is consistent with the findings of M. Li *et al.* (2025), determining that the systematic organisation of the educational environment has a positive effect on the prevention of sports injuries among students. This proved that the combination of pedagogical control and Olympic principles of safe training contributes to the preservation of students' physical health.

A. Martín-Rodríguez & R. Madrigal-Cerezo (2025) and M. Whitehead (2020) demonstrated that Olympic values stimulate more active participation of students in classes and increase the effectiveness of motor skill acquisition. The study noted that student participation in classes was higher in the experimental group compared to the control group, which indicates more active involvement of the first group in the learning process and regular attendance at training sessions. This correlates with the findings of W. Ning *et al.* (2022), in which preparation for sporting events creates a lasting educational and cultural effect of increased public interest in sport. There is also consistency with the findings of M.J. Schmid *et al.* (2022), determining that early acquisition of sports social-value norms can shape sustainable life strategies. The results obtained corresponded to the observations of A.B. Tamayo *et al.* (2024) analysed the significance of Olympic values among schoolchildren in Chile and Argentina. Awareness and acceptance of Olympic principles stimulate social activity and positive interaction in sporting events, confirming the possibility of transmitting these values to young audiences in general secondary education institutions. The increase in the effectiveness of mass sports activities is reflected not only in the increased activity of students, but also in the more rational use of sports facilities and equipment. This effect is consistent with the findings of N. Atghia (2022), comparing the use of sports facilities at universities in Iran and Canada and noted that the introduction of structured training programmes and systematic planning of sporting events contributes to the optimisation of resources and more effective engagement of participants. The integration of Olympic principles has made it possible to plan sports activities addressing the available equipment and infrastructure, ensuring an even distribution of use of sports halls and fields.

This correlated with the findings of H.M. Mason *et al.* (2024), who analysed the importance of instruction in conducting mass sporting events and noted that the adaptation of programmes depends on the positive outcome of this stage. Adjusting the schedule of classes and sporting events to incorporate the rules of instruction ensures stable student activity and reduces the risk of fatigue and injury. In terms of improving physical fitness and preventing injuries, the results confirm the effectiveness of a comprehensive approach to planning sports classes. According to the results of the 12-minute Cooper run, students in the experimental group covered an average of $2{,}070 \pm 200$ m, while the control group covered $1{,}850 \pm 210$ m. This indicates significantly higher cardiorespiratory endurance in students who participated in the Olympic Education programme, which is consistent with the findings of L. Ye & P. Di (2021) studied the regulation and control of injuries and fatigue in Winter Olympic athletes. The study established that a gradual increase in load, the use of various forms of physical activity and the alternation of sports increase students' motivation and contribute to the development of physical qualities. This approach coincides with the conclusions of Y. Zhou *et al.* (2021) and C. Xia & X. Lei (2023), who studied the optimisation of post-competition methods for high-level athletes and noted that variability and adaptation of loads increase the effectiveness of training and prevent overtraining. Students participating in structured cycles of sports activities demonstrate more consistent progress in physical fitness, confirming the advisability of gradually increasing activity levels.

Attendance in the experimental group increased to 92%, and participation in mass sporting events to 85%, indicating an increase in student motivation and engagement because of the programme. This is consistent with the findings of K. Tang (2023), determining that the organisation of mass sporting events under the Olympic Education programme ensures systematic and consistent work by teachers and students. The integration of sports equipment can improve the efficiency of tracking student participation in mass sporting events, planning team rotations, and optimising sports equipment use. The use of the algorithm ensures efficient allocation of time and resources, optimises sports equipment, monitors results and fosters a sense of achievement, success and high moral consciousness in schoolchildren. This result coincided with the conclusions of X. Xu *et al.* (2024) and A. Fengyingna *et al.* (2024), determining that regular repetition of activities with a gradual increase in the complexity and intensity of loads can mitigate overload and injury and ensuring progress in physical training. The results of post-intervention testing showed that improvements in physical fitness in the experimental group were statistically significant ($p < 0.05$) compared to the control group, in which the changes were insignificant. Thus, structured sports programmes increase the overall effectiveness of organising mass sporting events in

educational institutions. This contributes to the formation of a stable motivation for regular physical activity in students, the development of a sports culture and a responsible attitude towards personal health.

Conclusions

An analysis of the types of school Olympic Games demonstrated that each format has its own impact on students' physical fitness. Short and medium distance running helps improve speed, endurance and cardiovascular function. Relays and team games develop coordination, team spirit and responsibility for results. Jumping exercises and ball throwing contribute to the development of strength, physical exercise technique and self-discipline. Complex exercises integrate various motor skills and develop attentiveness and control of movements. The use of interactive and extracurricular formats increases student motivation and engagement, promotes the assimilation of Olympic values, and supports regular physical activity, ensuring the comprehensive development of schoolchildren.

Testing conducted after the programme's implementation showed that the experimental group significantly outperformed the control group in all physical fitness indicators: the average distance in the 12-minute Cooper run was 2,070 ± 200 m versus 1,850 ± 210 m, and push-ups in 1 minute were 30 ± 6 times versus 24 ± 5. Flexibility in the sit-and-reach test in the experimental group reached 24 ± 5 cm, while in the control group it was 19 ± 5 cm, and the shuttle run (10×5 m) time was 16.2 ± 1.8 s compared to 18.5 ± 2.1 s. These results indicate a higher level of cardiorespiratory endurance, strength, flexibility and coordination in students who participated in the Olympic Education programme.

The algorithm for organising mass sporting events under the Olympic Education programme ensures systematic and consistent work by teachers and students, creating a clear structure for participation in physical activity and the development of team skills. It involves planning the event, preparing participants, warming up with aerobic and flexibility exercises, the main part with running, relays, jumping, ball throwing and team games, as well as the final stage with evaluation of results and reflection. Following the algorithm increases motivation, promotes the development of physical qualities, and provides teachers with methodological support for monitoring the safety and effectiveness of events. The prospect for further research on the analysis of the effectiveness of using interactive digital platforms and mobile applications to increase motivation and systematic participation of students in mass sports events under the Olympic Education programme.

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Conflict of Interest

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Оптимізація спортивно-масової діяльності та фізичної підготовки учнів 14-16 років засобами інтеграції елементів Олімпійського спорту

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Анотація. Метою дослідження було дослідити вплив інтеграції програми «Олімпійська освіта» в шкільні олімпійські ігри та спортивно-масові заходи на рівень фізичної підготовки та розвиток учнів. Методологія дослідження включала порівняльний аналіз, квазіекспериментальне дослідження на базі Переяславського ліцею ім. В. Мономаха та Переяславського академічного ліцею ім. І. Мазепи, за участю 168 учнів в період з лютого по травень 2024 року та формування алгоритму організації спортивно-масових заходів на основі елементів програми «Олімпійська освіта». Було досліджено, що кожен вид вправ по-різному впливає на розвиток фізичних якостей учнів. Реалізація програми «Олімпійська освіта» сприяє систематичному поєднанню уроків фізичної культури та позакласних спортивно-масових заходів, забезпечуючи комплексний розвиток школярів через інтеграцію навчання, рухової активності та ігрової діяльності. На початку експерименту фізична підготовка учнів експериментальної та контрольної груп була порівняно однаковою, з незначними відмінностями у показниках кардіореспіраторної витривалості, сили, гнучкості та координації. Після проведення занять за програмою «Олімпійська освіта» експериментальна група продемонструвала суттєве покращення всіх показників: середня дистанція за 12-хвилинним бігом Купера становила 2 070 ± 200 м проти 1 850 ± 210 м у контрольній групі, кількість віджимань за 1 хвилину зросла до 30 ± 6 разів проти 24 ± 5, гнучкість за тестом «sit-and-reach» досягла 24 ± 5 см проти 19 ± 5 см, а час шатл-рану (10×5 м) склав 16.2 ± 1.8 с порівняно з 18.5 ± 2.1 с. Ці результати свідчать про значне підвищення кардіореспіраторної витривалості, сили, гнучкості та швидкості-координації учнів, які брали участь у гейміфікованих фізкультурних заняттях. Результати дослідження можуть використовувати вчителі фізичної культури та адміністрації шкіл для планування та впровадження програм «Олімпійська освіта», спрямованих на підвищення фізичної активності учнів

Ключові слова: підлітки; рухова активність; спортивно-масова робота; ігри; фізична підготовка, заклади загальної середньої освіти