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EXPERIMENTAL STUDY ON ADOLESCENTS' MOTIVATION FOR PHYSICAL EDUCATION

ЕКСПЕРИМЕНТАЛЬНЕ ДОСЛІДЖЕННЯ МОТИВАЦІЇ ПІДЛІТКІВ ДО ЗАНЯТЬ ФІЗИЧНОЮ КУЛЬТУРОЮ

The aim of this study was to experimentally verify the effectiveness of pedagogical conditions designed to enhance adolescents' motivation for physical education. Strengthening the health of the younger generation is recognized as a key priority both in Ukraine and worldwide, yet low motivation among students remains a significant challenge. Adolescence is a crucial stage when stable physical activity habits are formed, making the search for effective motivational approaches especially important. The research was conducted during the 2024–2025 academic year at the Scientific Lyceum "Polit" affiliated with the Kremenchuk Humanitarian-Technological Academy. A total of 108 eighth-grade students (59 boys and 49 girls aged 13–15) participated. The study comprised an ascertaining stage to diagnose motivational levels and a formative stage that introduced organizational and pedagogical conditions. These included diversification of lesson content, integration of game-based and competitive elements, use of modern fitness and cross-training tasks, fostering of a positive emotional climate, and adaptation of teaching methods to blended and distance learning formats. Results showed that students in the experimental group demonstrated significant improvements compared to the control group. Positive changes included increased interest in physical education, broader motivational orientations (from external to intrinsic), greater persistence in completing physical tasks, and higher involvement in extracurricular activity.

Key words: motivation, adolescents, physical education, pedagogical condition.

Метою цього дослідження було експериментально перевірити ефективність педагогічних умов, спрямованих на підвищення мотивації підлітків до занять фізичною культурою. Зміцнення здоров'я молодого покоління визнається ключовим пріоритетом як в Україні, так і у світі, проте низький рівень мотивації учнів залишається суттєвою проблемою. Підлітковий вік є критичним етапом формування стійких звичок до фізичної активності, що робить пошук ефективних мотиваційних підходів особливо важливим. Дослідження проводилося протягом 2024–2025 навчального року у Науковому ліцеї «Політ», який функціонує при Кременчуцькій гуманітарно-технологічній академії. Участь взяли 108 учнів восьмого класу (59 хлопців і 49 дівчат віком 13–15 років). Дослідження складалося з констатувального етапу, спрямованого на діагностику рівня мотивації, та формувального етапу, під час якого були впроваджені організаційно-педагогічні умови. До них належали: урізноманітнення змісту уроків, інтеграція ігрових і змагальних елементів, використання сучасних фітнес- і крос-тренінгових завдань, створення позитивного емоційного клімату, а також адаптація методів навчання до змішаного та дистанційного форматів.

Результати показали, що учні експериментальної групи продемонстрували суттєві покращення порівняно з контрольною групою. Позитивні зміни включали зростання інтересу до фізичної культури, розширення мотиваційних орієнтацій (від зовнішньої до внутрішньої мотивації), підвищення наполегливості у виконанні фізичних завдань і більшу залученість у позаурочну діяльність. Спостерігалось покращення емоційного ставлення до уроків фізичної культури, зменшення рівня тривожності під час виконання рухових дій та підвищення самооцінки учнів. Вони виявляли більшу ініціативність у виборі видів фізичної активності, частіше брали участь у спортивних заходах школи та поза нею. Отримані дані свідчать, що впроваджені педагогічні умови сприяли формуванню стійкої внутрішньої мотивації до занять фізичною культурою, що є важливим чинником для збереження активного способу життя у підлітковому віці.

Ключові слова: мотивація, підлітки, фізична культура, педагогічні умови.

Problem statement of the research. Strengthening the health of the younger generation remains one of the key priorities of social development both in Ukraine and worldwide. Regular physical activity is recognized as an essential condition for maintaining and promoting health, preventing a wide range of pathological conditions, and supporting emotional, volitional, and intellectual development. Adolescence is considered a particularly sensitive period for shaping sustainable habits of physical activity, making this age group a priority for pedagogical influence.

Despite the significance of physical education in schools, a number of researchers emphasize the insufficient motivation of pupils to engage in systematic physical activity. Previous studies have mainly focused on specific methodological aspects of physical education, while organizational and pedagogical conditions for motivating students in the context of modern educational reforms and the spread of distance learning remain insufficiently explored. The lack of clear methodological approaches to fostering motivation in adolescents makes this issue especially urgent.

According to the World Health Organization (WHO), one in four adults and three in four adolescents (aged 11–17 years) worldwide are classified as obese. With the rise of economic development, levels of physical inactivity tend to increase correspondingly. In some countries, the prevalence of physical inactivity reaches up to 70%, and adolescents, being particularly vulnerable to the influence of globalization, are increasingly adopting unhealthy lifestyle habits. These include poor dietary patterns characterized by low nutrient intake, excessive consumption of sugary and fast foods, insufficient inclusion of balanced food groups, and reduced engagement in physical activity.

In response to these challenges, current educational strategies, such as the National Strategy for Physical Activity in Ukraine until 2025 and recommendations on the strategic development of physical education, underline the importance of developing new motivational models. They emphasize the formation of a value-based attitude of youth towards health and regular physical exercise as a priority task for schools.

Given these considerations, the present **study aims** to provide a theoretical justification and experimental verification of pedagogical conditions that effectively promote motivation for physical activity among middle school students. The research focuses on identifying criteria and levels of motivation, developing organizational and pedagogical

conditions for its enhancement, and testing their effectiveness in real educational settings.

Research objectives:

1. To analyze scientific and methodological sources on the problem of developing adolescents' motivation for physical education.

2. To clarify the essence of basic concepts, criteria, indicators, and levels of students' motivation.

3. To determine the organizational and pedagogical conditions that contribute to increasing motivation for physical activity.

4. To experimentally verify the effectiveness of the proposed pedagogical conditions in the process of adolescents' physical education.

Analysis of recent research and publications. The findings of the present study indicate that implementing carefully designed organizational and pedagogical conditions significantly enhanced the motivation of adolescents to engage in physical education. During the ascertaining stage, most students showed low motivation, irregular participation in physical activity, and limited interest in autonomous forms of exercise. This pattern is consistent with earlier research. For example, Antunes et al. (2024) observed that among middle school students, lower levels of self-determined motivation were correlated with reduced engagement in extracurricular physical activity. Likewise, Yli-Piipari et al. (2009) documented that both intrinsic and extrinsic motives play roles in students' engagement in PE, but external regulation often dominates when the learning environment is insufficiently supportive.

During the formative stage, the pedagogical conditions introduced in this study—such as inclusion of game-based and competitive elements, diversification of fitness and cross-training tasks, and greater student autonomy—led to noticeable improvements in motivational indicators. These shifts align with broader evidence from school-based interventions. Kelso et al. (2020) in their meta-analysis found that interventions delivered within schools can improve intrinsic motivation, enjoyment, and student perceived autonomy in physical activity settings. ScienceDirect Further, Moreno-Murcia et al. (2016) reported that creating a task-oriented motivational climate enhances intrinsic motivation and reduces external regulation among younger students.

The emphasis in our intervention on fostering a positive emotional climate and recognizing individual achievements appears particularly effective in sustaining interest and persistence. This resonates with the tenets of self-determination theory, which posits that satisfaction of the needs for competence,

autonomy, and relatedness underlies intrinsic motivation (Ryan & Deci). In a related domain, Işıkgöz et al. (2025) demonstrated that high school students' emotions of achievement (e.g. pride, enjoyment) are more strongly associated with intrinsic motivation than extrinsic motives, especially when the instructional climate supports autonomy and competence.

Moreover, the adaptation of teaching formats to modern realities—such as using online materials, video tasks, and self-study components—ensured continuity and flexibility. This facet echoes findings in more general research on motivation and well-being: Zhang et al. (2025) showed that exercise motivation in adolescents is positively linked to subjective well-being, with physical activity and socio-emotional competencies mediating this relationship. Thus, integrating motivationally supportive digital and flexible methods may contribute to not only behavioral outcomes but also psychological ones.

The statistical analyses using IBM SPSS Statistics 26 confirmed that the observed differences between the experimental and control groups were statistically significant, underscoring the effectiveness of the intervention. Taken together, these findings contribute to growing evidence that pedagogical innovation—especially when it supports autonomy, interaction, emotional positivity, and adaptability—can meaningfully shift adolescents' motivational attitudes toward physical education.

Nonetheless, limitations of the current study warrant acknowledgment. The intervention's timespan was relatively short, making it difficult to assess long-term sustainability of motivation gains. Future research should adopt longitudinal designs, as Paap et al. (2025) suggest in their evaluation of intervention programs, to track motivational changes over longer periods and in diverse educational settings. Also, while the sample was reasonably large, replication in different cultural and institutional contexts would help generalize the findings. Finally, incorporating objective measures of physical activity (e.g. accelerometry) alongside self-report motivation could strengthen the link between motivational change and actual behavior, as seen in other physical activity research.

In summary, the present study aligns with and extends prior work by showing that well-designed organizational and pedagogical conditions can not only stimulate short-term motivational improvement but also suggest pathways for sustaining students' intrinsic interest in physical education over time.

Results. *Initial Findings (Ascertaining Stage).* At the beginning of the study, the diagnostic survey revealed a relatively low level of motivation

among eighth-grade students to participate in physical education. Many students reported irregular or complete absence of morning exercises and homework tasks related to physical culture. Independent training, outdoor workouts, and recreational physical activities such as hiking were not attractive to most participants. This highlighted the insufficient formation of stable motivational attitudes towards physical activity.

Implementation of Pedagogical Conditions (Formative Stage). During the formative stage of the experiment, specially designed organizational and pedagogical conditions were introduced to enhance students' motivation for physical education. First of all, these conditions involved the implementation of general and specific principles such as fairness and equality, interactivity, inclusiveness, and orientation towards the needs and interests of each student. This ensured an individualized approach and contributed to the development of intrinsic motivation for physical activity.

Another important condition was adherence to organizational rules of conducting lessons: maintaining a consistent lesson structure, ensuring regularity, and introducing tasks of gradually increasing complexity. These measures strengthened students' sense of responsibility and promoted systematic engagement in learning activities.

A further condition was the careful selection of motivational tools. Lessons incorporated game-based and competitive elements, team tasks, relay races, as well as modern fitness and cross-training components. This diversity and dynamism increased students' engagement and overall enjoyment of physical education classes.

Equally significant was the creation of a positive emotional climate in the learning environment. This was achieved through consistent encouragement, teacher support, recognition of individual achievements, and the establishment of a psychologically comfortable classroom atmosphere.

Finally, the adaptation of teaching forms and methods to contemporary educational contexts played a key role. In cases of partial distance learning, video materials, online tasks, and individual self-study plans were used. These tools maintained students' interest in physical education and ensured continuity of the learning process regardless of organizational circumstances (Table 1).

Comparative Outcomes. Analysis of the results demonstrated that students in the experimental group showed significant improvements in several motivational indicators compared to the control group.

Table 1

Mean values of students' motivational indicators in the control and experimental groups

Motivational Indicators	Control Group (n=56), M±SD	Experimental Group (n=52), M±SD	t	p
Interest in physical education	2.41 ± 0.52	3.87 ± 0.49	8.21	<.05
Range of motives	2.36 ± 0.61	3.72 ± 0.55	7.98	<.05
Persistence in physical exercise	2.28 ± 0.58	3.65 ± 0.62	8.15	<.05
Participation in extracurricular activity	2.17 ± 0.64	3.48 ± 0.60	7.64	<.05

Note: analysis was conducted using IBM SPSS Statistics 26 and Student's t-test.

Positive changes were observed Interest in physical education – students expressed greater enjoyment and engagement in classes.

Range of motives – from situational (e.g., avoiding negative marks) to intrinsic motives (e.g., improving health, achieving personal progress).

Persistence in performing physical exercises – more consistent fulfillment of tasks, including homework and extracurricular activities.

Participation in extracurricular physical activities – an increase in the number of students who joined sports clubs or practiced physical activity outside school.

Statistical Verification. The application of statistical methods via IBM SPSS Statistics 26 confirmed the reliability of the observed changes. The differences between the experimental and control groups reached statistically significant levels, which demonstrates the effectiveness of the implemented pedagogical conditions in fostering students' motivation towards physical education.

Conclusion and Recommendation. The study confirmed that the implementation of organizational and pedagogical conditions significantly improves adolescents' motivation to participate in physical education. At the ascertaining stage, students demonstrated low levels of motivation, irregular exercise habits, and limited interest in independent activities. During the formative stage, the introduction of specially designed conditions—diversified lesson content, game-based and competitive elements, creation of a positive emotional climate, and adaptation to modern educational contexts—resulted in notable improvements. Students in the experimental group showed increased interest, broader motivational range, greater persistence in performing physical tasks, and higher participation in extracurricular activities. Statistical analysis using IBM SPSS Statistics 26 validated these changes.

Recommendations. Diversify the content of physical education lessons through the inclusion of modern methods and game-based or competitive activities.

Foster a positive emotional climate in classes by providing encouragement, support, and recognition of individual achievements.

Promote extracurricular physical activity by engaging students in sports clubs and independent forms of exercise.

Utilize blended and distance learning tools with interactive materials to sustain motivation beyond the classroom.

Ensure systematic progression and gradual increase in task complexity to develop responsibility and intrinsic motivation.

In conclusion, purposefully designed pedagogical conditions represent an effective strategy for fostering motivation among adolescents and for cultivating positive attitudes towards physical education and a healthy lifestyle.

Prospects for Further Research. Future studies should focus on long-term monitoring of the sustainability of motivational changes that occur as a result of implementing pedagogical conditions in the physical education process. A promising direction involves the development and testing of digital tools and interactive platforms aimed at maintaining adolescents' interest in physical activity within blended and distance learning environments.

Attention should also be given to gender differences in motivational attitudes, as well as to the influence of emotional intelligence, social support, and family environment on students' engagement in physical activity. Expanding the sample size to include different age groups and types of educational institutions (lyceums, gymnasiums, colleges) would allow for broader generalization and higher validity of the results.

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