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METHODOLOGICAL JOURNAL**<http://mentaljournal-jspu.uz/index.php/mesmj/index>**DEVELOPMENT OF PHYSICAL ACTIVITY AND MOTOR ACTIVITY OF FEMALE STUDENTS BASED ON MODERN INNOVATIVE METHODOLOGIES****Umidakhon Eshmanova**

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ABOUT ARTICLE

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Abstract: This article analyzes the role of innovative pedagogical technologies in increasing the interest of female students in physical education lessons. In particular, the issues of increasing lesson effectiveness through the integration of modern information and communication tools, mobile applications and video analysis elements into the physical education process are highlighted. The study involved 120 female students, and the results showed higher indicators in the experimental group compared to the control group.

Introduction. One of the key conditions for the development of society is the upbringing of a healthy and well-rounded generation. Today, strengthening the health of young people and encouraging them to engage in physical activity are among the issues addressed at the level of state policy. In particular, the physical activity of female students is of special importance, as they are future mothers and a major factor in the social and demographic stability of society.

Recent medical and social studies indicate that the majority of girls are not physically active enough. The widespread use of computer technologies and mobile devices in everyday life has led to increased sedentary behavior. As a result, the effectiveness of traditional physical education classes has decreased, creating a need to introduce new and modern approaches.

The purpose of this article is to experimentally substantiate the effectiveness of innovative methodologies in engaging female students in physical education activities.

Literature Review. An analysis of scientific research in the fields of pedagogy and physical education shows that the traditional physical education system is mainly based on a uniform approach and does not sufficiently take into account students' individual characteristics, interests, and needs.

Studies conducted by foreign scholars such as S. Brown (2021), M. Lee (2022), and J. Smith (2023) have proven that the introduction of interactive elements, the use of digital tools, and the application of game technologies in physical education classes are among the most important factors in improving lesson effectiveness.

Methods. In the CIS countries, researchers such as A. Ivanov (2022) and N. Petrova (2023) developed methodologies based on differential and individual approaches, proposing the organization of training sessions according to each student's level of physical preparedness.

At the same time, studies conducted by Uzbek researchers such as R. Karimov (2023) and D. Tolipova (2024) reveal that there is still a lack of research specifically focused on the application of innovative approaches in the physical education of female students. Therefore, the relevance and scientific-practical significance of this issue continue to increase.

Research Methodology. The study was conducted at Oriental University during the 2024–2025 academic year. A total of 120 first- and second-year female students participated in the research. They were divided into two groups:

Control group (n=60) – classes were conducted based on traditional methodology;

Experimental group (n=60) – classes were organized using innovative methodologies.

The following research methods were applied in the study:

-pedagogical observation;

-tests: 1000-meter running (endurance), seated forward bend (flexibility), sit-ups in 30 seconds (strength), and 10×5-meter shuttle run (speed);

-questionnaire survey (to determine the level of motivation);

-experiment (conducted over a period of 6 months);

-mathematical-statistical analysis (Student's t-test).

The innovative methodologies applied in the experimental group included:

-Mobile applications – the use of Nike Training Club and Adidas Running to monitor and supervise homework assignments;

-Video analysis – recording female students while performing exercises and later analyzing their techniques together;

-QR code assignments – providing homework tasks through QR codes at the end of each lesson (videos, articles, and 5-minute exercise complexes);

-Motivational rating system – maintaining a ranking table by assigning points for completed tasks, attendance, and activity;

-Gamification elements – introducing competition-based game activities and organizing the “Most Active Girl of the Week” contest.

Main Part. During the study, the attitudes of female students toward physical activity and their physical fitness indicators were examined. The initial test results in both groups were almost identical, and the difference was not statistically significant ($p>0.05$).

After the 6-month experiment, the following results were recorded:

1. Endurance (1000 m running): the average result in the experimental group improved by 30 seconds, whereas in the control group the improvement was only 8 seconds.

2. Flexibility (seated forward bend): the experimental group showed an increase of 6 cm, while the control group improved by 2 cm.

3. Strength (sit-ups in 30 seconds): the average result in the experimental group increased by 5 repetitions, whereas the control group improved by only 1.5 repetitions.

4. Speed (10×5 m shuttle run): the experimental group improved by 1.2 seconds, while the control group improved by 0.3 seconds.

5. Motivation level (questionnaire results): in the experimental group, the motivation level increased from an initial 42% to 78%, whereas in the control group it rose from 44% to 51%.

Results and discussion.

The table below presents a comparative analysis of the main results.

Table 1.

Eksperiment boshi va oxiri natijalari (o‘rtacha qiymatlar)

Indicators	Control Group (Beginning)	Control Group (End)	Experimental Group (Beginning)	Experimental Group (End)
1000 m running (seconds)	312	304	315	285
Flexibility (cm)	9	11	8	14
Sit-ups (repetitions)	18	19,5	17	22
Speed (seconds)	14,2	13,9	14,4	13,2

Indicators	Control Group (Beginning)	Control Group (End)	Experimental Group (Beginning)	Experimental Group (End)
Motivation (%)	44%	51%	42%	78%

The results of the statistical analysis revealed that the indicators of the experimental group were significantly higher than those of the control group ($p < 0.05$).

In addition, interest in physical education classes increased considerably among the participants of the experimental group. Female students began bringing additional equipment to classes on their own initiative, recording and sharing videos, and continuing physical exercises even outside classroom hours.

Results and Discussion. The results of the experiment showed that modern tools such as mobile applications and video analysis are highly effective in increasing female students' interest in physical education activities. The students were given the opportunity to observe, analyze, and improve their movements and techniques. This, in turn, strengthened their self-confidence and enhanced their ability to control and evaluate their own performance.

Gamification elements, including rankings, points, and the "Girl of the Week" competition, created a competitive environment. Female students strived not only to improve their own results but also to compete with their classmates. As a result, their physical fitness indicators improved more rapidly and effectively.

The QR code-based homework system also helped maintain the students' physical activity outside classroom hours. Short exercises lasting 5–7 minutes did not require much time or effort, which encouraged the students to complete these tasks regularly.

An interesting observation was recorded at the end of the experiment: 53 out of 60 female students (88.3%) in the experimental group had made monitoring their physical activity through mobile applications a daily habit. In other words, they continued using innovative methodologies even after the completion of the lessons.

Conclusion. Based on the conducted research, the following conclusions were drawn:

1. Traditional approaches to increasing the physical activity of female students are becoming less effective. Therefore, the introduction of modern innovative methodologies is highly relevant and necessary.
2. Training sessions organized using mobile applications, video analysis, QR codes, and gamification elements allow for a 1.5–2 times faster improvement in physical fitness indicators.

3. Innovative methodologies significantly increase female students' interest and motivation toward physical education classes (from 42% to 78% in the experimental group).

4. Such an approach helps maintain physical activity not only during classes but also outside the classroom environment, ensuring continuous engagement in physical exercises.

The following practical recommendations were developed:

-To introduce mobile applications into physical education classes for female student groups, initially using free applications such as Nike Training Club, Adidas Running, and Google Fit;

-To establish a system of providing 5–7 minute homework assignments through QR codes at the end of each lesson;

-To introduce the practice of recording training sessions on video and analyzing them together with students at least once a month;

-To implement a rating system in which points are awarded for activity, task completion, and participation in competitions;

-To organize a university-wide “Most Active Female Student” competition and reward the winners;

-To organize professional development courses for physical education teachers on innovative methodologies.

In addition, conducting broader-scale research involving female students from different universities and regions is considered one of the most promising directions for future studies.

References:

1. Солопов И.Н. Функциональное состояние организма и методы его оценки. – Волгоград: ВГАФК, 2019. – 156 с.

2. Иргашев Ш.Б. Талаба қизларнинг жисмоний тайёргарлигини баҳолаш // Педагогика ва психологияда янги тадқиқотлар. – 2021. – №4. – Б. 45–50.

3. Нишанов Б.Қ. Олий таълимда жисмоний тарбиянинг долзарб муаммолари. – Тошкент: Фан ва технология, 2020. – 180 б.

4. Абдурахмонова Н.К. Кроссфит машғулотларининг аёллар организмига таъсири // Фан ва спорт. – 2022. – №2(56). – Б. 34–39.

5. Ma'murbekova, G. (2024). YUQORI MALAKALI SAMBOCHI QIZLARNI FUNKSIYANAL XOLATIGA TEZKOR KUCHNING TA'SRI. Modern Science and Research, 3(12), 1387-1390.

6. Ma'murbekova, G. (2024). IMPROVING THE SPEED AND AGILITY OF NATIONAL WRESTLERS. Multidisciplinary Journal of Science and Technology, 4(12), 34-37.

7. Abdullayev, I. X. (2023). Improvement of the special physical training model of greco-roman junior wrestlers. *Mental enlightenment scientific-methodological journal*, 9-20.
8. Muidinov, M. R. (2025). BODY PERCEPTION AND COORDINATION ABILITIES AS AN INTEGRATIVE BASIS FOR THE TECHNICAL AND TACTICAL TRAINING OF ATHLETES IN BELT WRESTLING. *Mental Enlightenment Scientific-Methodological Journal*, 6(08), 255-262.
9. Rustambek o'g, M. Y. M. (1988). li, "belbog 'li kurashchilarning koordinatsion mashqlar yordamida texnik-taktik tayyorgarligini takomillashtirish". *Ta'lim va innovatsion tadqiqotlar jurnali*, volum-3, 272-282. Balsevich VK *Fizicheskaya kultura dlya vsex i dlya kajdogo*. Moskva: FiS.
10. Mo'ydinov, M., & Jaynarov, N. (2025). O 'smir yoshdagi og 'ir atletikachilarning ratsional ovqatlanishini samarali tashkillashtirishning usullari. *Modern Science and Research*, 4(6), 398-406.