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METHODOLOGICAL JOURNAL****MENTAL ENLIGHTENMENT SCIENTIFIC –
METHODOLOGICAL JOURNAL**<http://mentaljournal-jspu.uz/index.php/mesmj/index>**METHOD OF INCREASING THE INDICATORS OF PHYSICAL TRAINING AND
COORDINATION ABILITY OF WRESTLERS****Mashkhurbek Inomjonovich Nematov***Fergana branch of the Institute for retraining and improving the qualifications of specialists in physical education and sports**Associate professor**Department "Theory and methodology of physical education, sports"**E-mail: Nemattov@gmail.com**Fergana, Uzbekistan***ABOUT ARTICLE**

Key words: Wrestling; physical fitness; coordination skills; methodology; young athletes; speed; agility; endurance; strength; action games.

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Abstract: This article develops a special methodology aimed at increasing the indicators of physical training and coordination ability of young wrestlers aged 10–12 years, and its effectiveness is analyzed scientifically and practically. During the study, the physical development, movement qualities (strength, speed, endurance, agility and coordination) of athletes of this age group were assessed using preliminary tests. Then, an 8-week special training program was introduced to the experimental group, and the results were compared with the indicators of the control group. At the end of the experiment, wrestlers from the experimental group showed a significantly higher increase in physical training tests compared to the control group (for example, 8–10% improvement in speed and agility tests, $p < 0.05$). It was found that this method effectively develops the general physical fitness and coordination skills of 10–12-year-old wrestlers, creating a basis for them to achieve high results in the future.

Introduction. The reforms being implemented in our country in the field of physical education and sports are aimed at fostering a healthy, physically developed, and comprehensively educated younger generation. In particular, a number of state-level measures are being carried out to promote and further develop the sport of wrestling. In recent years, Presidential decrees and resolutions dedicated to the promotion of physical culture and sports, as well as the preparation of the Olympic reserve, have emphasized the necessity of creating favorable conditions for regular participation in sports and providing comprehensive support for young athletes. As a result of these initiatives, the network of children's and youth sports schools has significantly expanded, and hundreds of young wrestlers are systematically engaged in organized training activities.

Wrestling is a sport characterized by complex technical and tactical actions, as well as a high level of physical exertion. Achieving high athletic performance in this sport requires the harmonious development of all major physical qualities, including strength, speed, endurance, flexibility, and coordination. In particular, an athlete's ability to coordinate movements plays a decisive role in the rapid and accurate mastery of technical skills, as well as in perceiving and adapting to an opponent's actions. Therefore, alongside the improvement of physical preparedness, priority attention should be devoted to the development of coordination abilities from an early age.

The age period of 10–12 years represents a particularly important stage in human ontogenetic development. During this stage, rapid changes occur in children's muscular system, skeletal structure, cardiovascular system, and respiratory system. At the same time, their ability to control and coordinate movements continues to develop intensively. Scientific studies indicate that coordination abilities demonstrate significant growth dynamics between the ages of 10 and 12; however, this potential may not be fully realized if the training process is inadequately organized or methodologically inappropriate. For this reason, the establishment of a training system based on modern scientific and methodological approaches at the stage of initial sports preparation is of particular importance. Nevertheless, scientific literature indicates that in some cases insufficient attention is paid to the physical and psychological preparation of young wrestlers during the initial training stage in children's sports schools. Such shortcomings may negatively affect the future athletic achievements of young wrestlers.

Considering the above-mentioned problems and the specific developmental characteristics of this age group, the primary objective of the present study was to develop and experimentally substantiate a specialized training methodology aimed at improving the

physical preparedness and coordination abilities of wrestlers aged 10–12 years, as well as to evaluate its effectiveness under practical training conditions.

The purpose of the study was to improve the methodology for developing general physical preparedness and coordination abilities (motor coordination) in wrestlers aged 10–12 years and to determine its practical effectiveness.

Methodology. A total of 30 male wrestlers aged 10–12 years (mean age 11.0 ± 0.8 years) participated in the study. The participants were randomly divided into two equal groups: an experimental group ($n=15$) and a control group ($n=15$). The experimental group trained according to a specially designed 8-week training program, while the control group continued training according to the standard curriculum. The weekly training volume and intensity were maintained at approximately the same level in both groups; however, the experimental group additionally performed coordination exercises and movement-based games.

Pre- and Post-Training Testing

Before the beginning of the training intervention, the level of physical preparedness of all participants was assessed using a battery of tests. The following control tests were selected:

- Speed test: 30 m sprint (s) — time required to cover a short distance at maximum speed.
- Agility test: 3×10 m shuttle run (s) — repeated running between two lines spaced 10 meters apart; this test evaluates agility and the ability to rapidly coordinate movements.
- Explosive strength test: standing long jump (cm) — maximum jumping distance performed from a standing position using both legs.
- Strength test: pull-ups on a horizontal bar (repetitions) — maximum number of pull-ups performed, used as an indicator of muscular strength in young athletes.
- Endurance test: distance covered in 6 minutes (m) — maximum running distance completed within 6 minutes, used to assess general endurance.

The results of all tests were recorded for each participant, and baseline mean values for both groups were calculated. Subsequently, the experimental group underwent training according to the specialized program. The training program included additional sessions conducted three times per week. Particular emphasis was placed on the following components:

Coordination Exercises

Rapid footwork drills using an agility ladder, running between cones, zigzag movements, and balance exercises (single-leg tasks and balance drills using gymnastic equipment).

Jumping and Athletics-Based Elements

Different types of standing and running jumps, triple-jump exercises, and vertical jumps (for example, using the Abalakov method) aimed at developing coordination and explosive strength.

Movement-Based Games

Certain parts of the training sessions incorporated team-based and paired movement games (relay races and “who is faster?”-type games). Such activities not only increased the motivation and interest of young athletes but also contributed effectively to the development of speed, strength, and agility.

General Physical Exercises

Age-appropriate strength exercises without external weights were additionally applied, including bodyweight exercises such as pull-ups, push-ups, abdominal exercises, as well as gymnastic elements performed with balls and other simple equipment.

The additional exercises introduced in the experimental group were designed according to a comprehensive approach aimed at improving movement coordination and developing fundamental physical qualities. In contrast, the control group continued following the standard wrestling training program focused on technical instruction and general physical preparedness without modification.

After the completion of the 8-week training program, both groups repeated the same control tests. The changes achieved in the experimental and control groups were compared using comparative analysis. Statistical analysis included the calculation of mean values (M) and standard deviations ($\pm$ SD). Differences between groups were evaluated using Student’s t-test, and results were considered statistically significant at $p < 0.05$.

Results and Discussion. Following the 8-week specialized training program, significant positive changes were observed in the performance indicators of the experimental group (Table 1). The table below presents a comparative analysis of the pre- and post-training test results of both groups.

Table 1. Results of Control Tests of 10–12-Year-Old Wrestlers in the Experimental and Control Groups (M $\pm$ SD)

Test (unit of measurement)	Experimental group initial	Experimental group final	Control group initial	Control group final
30 m sprint (s)	6.50 $\pm$ 0.30	5.98 $\pm$ 0.28 ▲	6.48 $\pm$ 0.33	6.25 $\pm$ 0.31 ▲
3×10 m shuttle run (s)	11.5 $\pm$ 0.5	10.5 $\pm$ 0.4 ▲	11.3 $\pm$ 0.6	11.0 $\pm$ 0.5 *

Standing long jump (cm)	155.0 ± 15.2	170.3 ± 14.8 ▲	153.4 ± 16.0	160.1 ± 15.5 ▲
Pull-ups on horizontal bar (repetitions)	3.0 ± 1.1	5.0 ± 1.3 ▲	3.2 ± 1.0	4.0 ± 1.1 ▲
Distance covered in 6-minute run (m)	845 ± 95	948 ± 90 ▲	832 ± 100	900 ± 96 ▲

*Izoh: ▲ — $p < 0,05$ darajasida statistik ahamiyatli yaxshilanish; * — $p > 0,05$, ahamiyatli emas.*

The results presented in the table demonstrate that at the beginning of the training stage there were virtually no significant differences between the experimental and control groups in any of the measured indicators ($p > 0.05$). However, following the training period, the experimental group achieved superior results in all tests compared to the control group. In particular, the experimental group improved the 30 m sprint performance by an average of 0.52 seconds (approximately 8%), whereas the control group improved by only 0.23 seconds (3.5%). Similarly, in the 3×10 m shuttle run (agility test), the experimental group demonstrated an improvement of approximately 9% (from 11.5 s to 10.5 s), while the control group showed only about a 3% improvement (from 11.3 s to 11.0 s). The standing long jump distance increased by an average of 15 cm ($\approx 10\%$) in the experimental group, compared to only 7 cm ($\approx 5\%$) in the control group. Pull-up performance also improved substantially in the experimental group (approximately two additional repetitions), whereas the control group demonstrated an increase of only about one repetition. In the 6-minute run test, the experimental group increased the covered distance by an average of 103 m (12%), while the control group improved by approximately 68 m (8%).

According to the statistical analysis, the post-training improvements of the experimental group in the 30 m sprint, 3×10 m shuttle run, and 6-minute run were significantly greater than those observed in the control group ($p < 0.05$). Positive differences were also identified in the jumping and pull-up tests; however, because the control group also demonstrated certain improvements, the level of statistical significance between groups was slightly lower ($p \approx 0.05$).

These findings confirm that the specialized training program applied to young wrestlers contributed to significant improvements in tests requiring general physical preparedness and coordination abilities. Although the control group, which trained according to the standard program, also demonstrated improvements across all indicators, the rate of progress was lower compared to the experimental group. Several previous studies have reported that physical

performance indicators in athletes aged 10–12 years naturally improve over time as a result of regular training. For example, D.X. Bekov (2025) noted that wrestlers aged 10, 11, and 12 years covered 832 m, 884 m, and 906 m, respectively, in a 6-minute run test, indicating a gradual age-related increase in endurance capacity. At the same time, although dynamic improvements in many fundamental physical qualities are observed between the ages of 10 and 12, such changes over short-term periods are not always statistically significant ($p>0.05$). This suggests that while standard training programs may provide natural age-related improvements, specialized methodological approaches are necessary to accelerate progress and achieve statistically reliable outcomes.

The obtained results demonstrate the high effectiveness of the specially designed training program in improving speed, agility, strength, and endurance among wrestlers aged 10–12 years. In particular, the inclusion of movement-coordination exercises enabled young athletes to demonstrate a tendency toward faster acquisition of technical skills within a relatively short period. During the training process, coaches observed improvements in coordination among the experimental group participants, such as a reduction in errors while performing complex technical actions. This indicates that the program had a positive effect not only on physical preparedness but also on technical-tactical readiness. Scientific literature also emphasizes that improvements in coordination facilitate the faster acquisition of new motor skills and contribute to reducing the risk of injuries. Therefore, the inclusion of multicomponent exercises, gymnastics, and acrobatic elements in training programs during childhood and adolescence is considered highly important.

Previous studies have reported positive outcomes from gymnastics- and acrobatics-based approaches aimed at developing coordination abilities in wrestlers aged 10–12 years. Since our program also incorporated similar elements — including jumping exercises, balance drills, and movement-based games — the experimental group demonstrated significant improvements in tests requiring coordination abilities, particularly agility and jumping performance.

Theoretical and practical sources recommend the use of various movement-based games and engaging teaching methods during the initial stage of wrestling preparation in order to increase children's motivation and active participation. In his research, S.R. Qodirov (2022) emphasized that integrating movement-based games into the training process can significantly improve speed and strength qualities in young wrestlers. Likewise, the inclusion of team-based and competitive games within our weekly training sessions increased the athletes' motivation and positively influenced their physical preparedness indicators.

Another important aspect is the appropriate regulation of training loads according to the age-related characteristics of young athletes. At the age of 10–12 years, children's body structure and physiological capacities are still in the process of development. Consequently, excessive training loads and monotonous repetition of movements may lead to fatigue or decreased motivation. In designing the experimental program, we adhered to the principle of gradually increasing training volume and intensity in accordance with the athletes' age and preparedness level. Beginning with simple coordination exercises and light games, followed by a systematic increase in complexity and workload, contributed to effective functional adaptation. In addition, sufficient recovery time was provided through rest days and lighter training sessions. As a result, the experimental group demonstrated improved functional preparedness and a greater capacity to tolerate higher workloads, which was also reflected in the endurance test results.

The presented findings highlight the importance of introducing scientifically grounded innovative methodologies into the initial stage of wrestling preparation in our country. Today, international competition in wrestling is becoming increasingly intense, and athletic success requires attention even to the most subtle aspects of physical preparedness. Under such conditions, it is essential to focus on the comprehensive development of athletes from an early age and to apply training methods that allow them to fully realize their internal potential.

Based on the experimental results, the following practical recommendations may be proposed:

- Prioritize coordination training from the initial stage: Training programs for wrestlers aged 10–12 years should include coordination exercises such as ladder drills, jumping exercises, and balance tasks. These methods accelerate the acquisition of technical skills and contribute to overall physical development.
- Use movement-based games: To make training sessions more engaging and effective, it is advisable to allocate time for movement-based games at least 1–2 times per week. Such games develop competitive spirit, teamwork, and initiative while providing sufficient physical load without causing excessive fatigue.
- Gradually increase training load: When designing programs for athletes aged 10–12 years, training loads should be increased progressively while avoiding excessive strain. Training should begin with simple and short-duration exercises, followed by more complex and longer tasks.

- Conduct regular monitoring tests: Coaches should assess athletes' physical preparedness through testing every 2–3 months. This approach allows the identification of strengths and weaknesses and enables timely adjustments to the training process.

Conclusion. The results of the study demonstrated the effectiveness of the specialized methodology aimed at developing physical preparedness and coordination abilities in wrestlers aged 10–12 years. Within a relatively short period, the experimental group achieved significant improvements in speed, agility, strength, and endurance, demonstrating superior results compared to the control group that trained according to the standard program. Most importantly, the proposed set of exercises contributed to the development of coordination abilities in young athletes, which is expected to have a positive influence on their technical preparedness and competitive performance.

Thus, the methodology developed within the framework of this study represents an effective approach for the comprehensive physical development of wrestlers aged 10–12 years, as well as for improving wrestling-specific balance and movement coordination. The implementation of this approach in children's sports schools and during the initial stage of wrestling training may assist coaches in fully realizing the athletic potential of young wrestlers. Alongside the positive outcomes obtained, there remains a need for further research on certain issues, such as the optimal duration of training cycles and more precise standards for training load regulation. Continued research in this field and further refinement of the methodology for different age groups may contribute to raising the overall level of wrestler preparation to a higher standard.

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