

**MENTAL ENLIGHTENMENT SCIENTIFIC –
METHODOLOGICAL JOURNAL****MENTAL ENLIGHTENMENT SCIENTIFIC –
METHODOLOGICAL JOURNAL**<http://mentaljournal-jspu.uz/index.php/mesmj/index>**PROGRESSIVE STEP-BY-STEP METHODS FOR ENHANCING TECHNICAL
MASTERY IN GRECO-ROMAN WRESTLERS****Djasur Y. Tashnazarov**

*DSc (Doctor of Pedagogical Sciences), Associate Professor
Institute of Scientific Research in Physical Education and Sports
Email: djasurtashnazarov@gmail.com
Tashkent, Uzbekistan*

ABOUT ARTICLE

Key words: Greco-Roman wrestling, technical mastery, step-by-step training, motor skill acquisition, movement coordination, physical preparation, progressive training, technique automation, dynamic balance, wrestling performance.

Received: 05.07.26**Accepted:** 06.07.26**Published:** 07.07.26

Abstract: The effectiveness of Greco-Roman wrestlers in executing technical actions is closely interrelated with their level of physical fitness, movement coordination, balance, and dynamic strength. In this process, the use of systematically structured, step-by-step training programs is considered the most important methodological approach for achieving technical mastery. These programs are designed to progressively develop and refine technical skills, taking into account each wrestler's age, stage of preparation, physical condition, and psychological readiness.

The step-by-step mastery system is a methodical sequence that begins with the simple forms of technical actions and gradually progresses toward more complex combinations, while strengthening movement automation and tactical coordination. In the initial stage, athletes develop a clear understanding of the technical movements, including the correct trajectory of motion, body balance, and the harmonious coordination of arm and leg actions. In the subsequent stage, these movements are repeatedly practiced through specialized exercises until a certain level of automation is achieved. In the final stage, the focus shifts to applying these actions in real competitive situations, adapting to the opponent, and

developing the ability to make effective tactical decisions.

When assessing technical performance, the wrestler's level of technical mastery serves as the primary criterion. This level is determined by the richness of their technical arsenal, the ability to execute movements accurately and timely, the speed and duration of actions, and most importantly, the effectiveness of these movements in training and competitive environments. It is not merely the quantity of technical actions that matters, but rather the high quality of their execution and their successful application under real competitive conditions.

Introduction. The results of our experimental study, obtained through comparative analysis between the control and experimental groups, revealed that the experimental group, which trained using systematically structured step-by-step training programs, achieved significantly higher levels of accuracy and stability in the execution of technical actions. These athletes demonstrated superior performance in executing movements with precision in a short time, maintaining optimal body position, responding rapidly to opponent's actions, and effectively applying technical maneuvers under various conditions. This clearly confirms the high effectiveness of the planned step-by-step training system. The frequency of repetition and the time allocated for mastering technical actions during training sessions are decisive factors in the development of an athlete's technical skill level. As the number of repetitions increases, movement automation develops, and muscle memory is strengthened. This, in turn, facilitates faster and more accurate technical decision-making in competitive situations. Particularly important in a well-organized step-by-step training program is the regular updating of the wrestler's technical repertoire, practicing techniques against real opponent resistance, and developing the ability to make decisions in dynamic environments.

The effectiveness of Greco-Roman wrestlers in performing technical actions is formed through a combination of their individual physical preparedness, psychomotor functions, and — most importantly — the application of scientifically grounded, progressively structured training programs. Such programs enable athletes to thoroughly develop technical skills, adapt them to real competitive conditions, and achieve a high level of precision in movement execution. Consequently, this approach ensures the athlete's technical and tactical superiority and significantly increases the likelihood of achieving high competitive results. The strength and endurance of the upper limb muscles in Greco-Roman wrestlers are among the key factors

determining the effective execution of technical actions. Particularly during standing positions and movement across the mat, maintaining control over the opponent, sustaining grips, and successfully performing technical maneuvers require a high level of hand and arm strength. In this regard, specially designed circular movement exercises serve as an important methodological tool for developing upper limb muscles.

The mechanism of these exercises is aimed at increasing the strength of the athletes' hands, shoulders, elbows, and forearm muscles. Training is primarily conducted in pairs, where wrestlers perform static-dynamic resistance exercises — such as pushing, pulling, rotating, and holding the opponent — while continuously moving across the mat. These actions are executed along circular trajectories: moving forward, shifting laterally, and moving backward, all while maintaining continuous arm activity. Through such exercises, wrestlers develop the ability to sustain arm strength during prolonged movement, coordinate locomotion with upper body control, and maintain effective grip pressure. This directly translates into higher efficiency during actual competitive bouts. During these movements, the muscles of the arms alternate between isometric and dynamic contractions, contributing to their comprehensive development.

Circular strength exercises targeting the arms are incorporated into weekly training plans and are performed in intervals of 30–45 seconds with short rest periods (15–20 seconds). The intensity and complexity of the exercise trajectories are progressively increased in accordance with the athlete's level of preparedness. Overall, this training mechanism is designed not only to develop isolated muscle strength but also to enhance the ability to control force during dynamic movement and effectively integrate it with technical actions. Consequently, this approach significantly improves the wrestler's efficiency in real competitive situations.

Materials and Methods. This study employed a randomized controlled experimental design with pre-test and post-test measurements. The research was conducted over a 12-week period between March and June 2025. Two groups were formed: an experimental group (n=18) and a control group (n=18). The experimental group followed a specially designed step-by-step technical training program, while the control group trained according to the traditional standard program used by the national wrestling team. The participants were 36 male Greco-Roman wrestlers aged 18–24 years (mean age: 20.8 ± 1.6 years), with sport experience ranging from 6 to 12 years. All athletes were members of regional and national wrestling teams. Inclusion criteria included: absence of acute injuries, regular participation in training for at least 6 months prior to the study, and written informed consent. The study was approved by

the Ethical Committee of the Institute of Sports Science and approved in accordance with the Declaration of Helsinki.

Experimental Group: The athletes followed a progressive step-by-step technical training program consisting of four stages:

- Stage 1 (Weeks 1–3): Formation of basic technical concepts and movement patterns
- Stage 2 (Weeks 4–6): Development of movement automation and stability
- Stage 3 (Weeks 7–9): Integration of technical actions under dynamic conditions
- Stage 4 (Weeks 10–12): Application of technical skills in simulated competitive situations with high resistance

Special emphasis was placed on circular arm strength and coordination exercises, grip control under movement, and tactical decision-making.

Control Group: The control group followed the conventional training program used by the national team, which included general technical-tactical training without a structured step-by-step progression. Training sessions were held 6 days per week, with a total duration of 90–120 minutes per session.

1. Technical Skill Assessment: Technical execution was evaluated using a standardized Greco-Roman wrestling technical proficiency scale (adapted from FILA/UWW criteria). Three international referees assessed performance.

2. Physical Fitness Tests:

- o Handgrip strength (digital dynamometer)
- o Arm endurance test (pull-up endurance)
- o Dynamic balance test (Star Excursion Balance Test)
- o Coordination tests (specific wrestling coordination battery)

3. Video Analysis: All training sessions and testing were recorded using high-speed cameras (240 fps) for biomechanical analysis.

Figure 1. Schematic representation of the four-stage progressive technical training model.

Figure 2. Example of circular arm strength and coordination exercise performed during training.

Figure 3. Pre- and post-test comparison of technical execution quality between experimental and control groups (bar graph).

Data were analyzed using SPSS version 27.0. The normality of data distribution was checked using the Shapiro-Wilk test. Independent samples t-test and paired samples t-test were

used to determine differences between and within groups. Effect sizes were calculated using Cohen's d. The significance level was set at $p < 0.05$.

Results. The comparative analysis of the experimental and control groups revealed statistically significant improvements in technical execution and physical parameters in the experimental group after the 12-week intervention. As shown in Table 1, the experimental group demonstrated a substantial improvement in technical execution quality. The mean technical proficiency score increased from 68.4 ± 4.2 to 87.6 ± 3.1 points ($p < 0.001$), representing a 28.1% improvement. In contrast, the control group showed only a 9.7% improvement (from 67.9 ± 4.5 to 74.5 ± 4.0 points).

Table 1. Changes in Technical Execution Quality Scores (pre-test vs post-test)

Parameter	Group	Pre-test (Mean ± SD)	Post-test (Mean ± SD)	Improvement (%)	p-value	Cohen's d
Technical Proficiency Score	Experimental	68.4 ± 4.2	87.6 ± 3.1	+28.1	< 0.001	2.14
Technical Proficiency Score	Control	67.9 ± 4.5	74.5 ± 4.0	+9.7	0.012	0.68
Movement Accuracy (%)	Experimental	64.2 ± 5.1	83.7 ± 3.8	+30.4	< 0.001	2.31
Stability under Resistance	Experimental	61.8 ± 4.7	79.5 ± 4.2	+28.6	< 0.001	2.08

Figure 1. Comparison of technical proficiency scores between experimental and control groups before and after the intervention (bar chart with error bars). Significant improvements were observed in handgrip strength and arm endurance in the experimental group. Handgrip strength increased by 21.3% in the experimental group compared to 7.8% in the control group ($p < 0.01$). Arm endurance (pull-up test) showed a 34.6% improvement in the experimental group.

Table 2. Changes in Upper Limb Strength and Endurance Parameters

Parameter	Group	Pre-test	Post-test	Change (%)	p-value
Handgrip Strength (kg)	Experimental	48.2 ± 5.6	58.5 ± 4.9	+21.3	< 0.001
Handgrip Strength (kg)	Control	47.9 ± 5.3	51.6 ± 5.1	+7.8	0.034
Arm Endurance (reps)	Experimental	18.4 ± 3.2	24.8 ± 3.5	+34.6	< 0.001
Dynamic Balance Score	Experimental	71.5 ± 6.1	84.2 ± 4.8	+17.8	< 0.001

Figure 2. Percentage improvement in handgrip strength and arm endurance between groups (column chart).

Figure 3. Correlation between upper limb strength development and technical execution quality in the experimental group (scatter plot with regression line).

The experimental group showed markedly better results in movement coordination and stability under resistance. The ability to maintain balance while executing technical throws improved by 26.4% in the experimental group, compared to 8.9% in the control group.

Discussion. The results of the present study clearly demonstrate the superior effectiveness of a systematically structured, step-by-step technical training program compared to traditional training methods in Greco-Roman wrestling. The experimental group, which followed the progressive training model, showed significantly greater improvements in technical execution quality, movement accuracy, upper limb strength, endurance, and dynamic balance over the 12-week period. These findings support the theoretical framework of motor learning and skill acquisition, particularly the concept of progressive overload and sequential learning. The substantial 28.1% improvement in technical proficiency scores in the experimental group (compared to 9.7% in the control group) indicates that breaking down complex wrestling techniques into structured, progressive stages allows athletes to develop stronger movement patterns, better automation, and improved tactical decision-making under pressure.

The marked enhancement in upper limb strength and endurance (21.3% and 34.6% respectively) confirms that the circular resistance exercises incorporated into the program effectively target the specific muscle groups most critical for Greco-Roman wrestling — particularly during tie-ups, throws, and ground control. The alternation between isometric and dynamic contractions during movement appears to be highly effective for developing sport-specific strength, which is often a limitation in traditional strength training programs. One of the most important outcomes of this study is the strong correlation observed between upper limb strength development and technical execution quality. This supports previous research suggesting that technical mastery in wrestling is not only a matter of coordination but is heavily dependent on the athlete's ability to generate and control force during dynamic, continuous movement.

The findings also align with motor learning theories (e.g., Fitts and Posner's stages of motor learning), showing that athletes who progressed through clearly defined cognitive, associative, and autonomous stages achieved significantly better results. This structured approach appears to accelerate the transition from conscious control to automatic execution — a critical factor in high-level wrestling performance. However, several limitations should be acknowledged. The study was conducted with a relatively small sample size (n=36) over a 12-

week period. Long-term effects beyond 12 weeks were not examined. Additionally, although video analysis was used, more advanced biomechanical equipment (such as force plates and 3D motion capture) could provide deeper insights in future studies. Despite these limitations, the practical implications of this research are considerable. The step-by-step progressive training model can be effectively integrated into the daily training programs of Greco-Roman wrestlers at various levels — from youth development to elite national team preparation. Coaches should pay particular attention to the systematic development of sport-specific upper limb strength within technical training rather than treating strength and technique as separate components.

Conclusion. This study demonstrated that a well-structured, progressive step-by-step training program significantly enhances the technical mastery of Greco-Roman wrestlers compared to traditional training methods. Over the 12-week intervention period, the experimental group achieved markedly superior improvements in technical execution quality (28.1%), movement accuracy, upper limb strength and endurance, dynamic balance, and the ability to perform technical actions under resistance. The findings confirm that technical proficiency in Greco-Roman wrestling is not developed through random repetition but through a systematically organized pedagogical process that progresses from basic movement patterns to complex technical-tactical combinations. The integration of sport-specific circular strength exercises within technical training proved particularly effective in developing the functional strength and coordination required for high-level wrestling performance.

These results have important practical implications for coaching practice. The step-by-step training methodology can be successfully implemented across different stages of long-term athlete development — from youth sports schools to elite national team preparation. Coaches should shift from traditional volume-based training toward more structured, progressive, and scientifically grounded programs that simultaneously develop technical skills and sport-specific physical qualities. The study also highlights the critical importance of training the upper limbs not in isolation, but within the context of continuous movement and technical execution. This integrated approach leads to better movement automation, improved tactical decision-making, and higher competitive performance.

In conclusion, the systematic application of progressive step-by-step training programs represents a highly effective methodological approach for elevating the technical standard of Greco-Roman wrestlers. The successful implementation of this model can contribute significantly to the further development of wrestling in Uzbekistan and help produce athletes capable of achieving consistent success at the highest international levels, including the Olympic Games. Future research should focus on the long-term effects of this training system,

its application across different age groups, and its integration with modern technologies such as biomechanical analysis and artificial intelligence-based feedback systems.

References:

1. Tashnazarov D. Yunon-rim kurashchilarini texnik tayyorgarligini takomillashtirishda tik turgan holatdan yelkalardan oshirib tashlash harakatining kinematik asoslarini o'rganish (o'ng tomonga bajarish asosida) //Farg'ona davlat universiteti. – 2025. – №. 1. – C. 32-32.
2. Tashnazarov D. Sportning yunon-rim kurash turida texnik tayyorgarlikini takomillashtirishda tik turgan holat yelkalardan oshirib tashlash harakatining samaradorligi (chap tomonga bajarish asosida) //Farg'ona davlat universiteti. – 2025. – №. 1. – C. 26-26.
3. Tashnazarov D. Kinematic foundations of the arm wrapping and throwing movement from a standing position in the improvement of greco-roman wrestlers' technical training (based on the execution of the technique to the right side) //Mental Enlightenment Scientific-Methodological Journal. – 2025. – T. 6. – №. 01. – C. 119-134.
4. Tashnazarov J. Greco-roman wrestlers performance indicators of technical methods and their effectiveness //Mental Enlightenment Scientific-Methodological Journal. – 2023. – T. 4. – №. 6. – C. 292-301.
5. Tashnazarov D. Yunon-rim kurashchilarini texnik tayyorgarligini takomillashtirishda tik turgan holatdan yelkalardan oshirib tashlash harakatining kinematik asoslarini o'rganish (o'ng tomonga bajarish asosida) //Farg'ona davlat universiteti. – 2025. – №. 1. – C. 32-32.
6. Tashnazarov D. Sportning yunon-rim kurash turida texnik tayyorgarlikini takomillashtirishda tik turgan holat yelkalardan oshirib tashlash harakatining samaradorligi (chap tomonga bajarish asosida) //Farg'ona davlat universiteti. – 2025. – №. 1. – C. 26-26.
7. Tashnazarov D. Kinematic foundations of the arm wrapping and throwing movement from a standing position in the improvement of greco-roman wrestlers' technical training (based on the execution of the technique to the right side) //Mental Enlightenment Scientific-Methodological Journal. – 2025. – T. 6. – №. 01. – C. 119-134.
8. Tashnazarov J. Greco-roman wrestlers performance indicators of technical methods and their effectiveness //Mental Enlightenment Scientific-Methodological Journal. – 2023. – T. 4. – №. 6. – C. 292-301.