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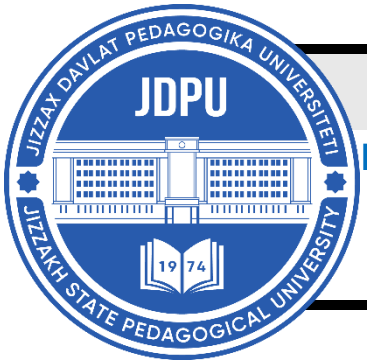
MENTAL ENLIGHTENMENT SCIENTIFIC – METHODOLOGICAL JOURNAL



MENTAL ENLIGHTENMENT SCIENTIFIC – METHODOLOGICAL JOURNAL
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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)

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ABOUT ARTICLE

Key words: physical preparation, technical preparation, tactical actions, kinematic foundations of right-side technical movements.

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Abstract: This article presents the angular measurements of body parts influencing the execution of the right-side arm wrapping and throwing technique in the training processes of Greco-Roman wrestlers in the U20, U23, and senior categories. A kinematic analysis was conducted to assess the accuracy of the right-side technical movement in Greco-Roman wrestling, identify movement errors, and explore strategies for their correction.

INTRODUCTION

Today, an effective national system encompassing various social strata of the population in Greco-Roman wrestling has been established in our country, and it is already yielding positive results. This achievement has been recognized not only by local experts but also by foreign specialists. “A new system for improving the selection process of talented athletes has been introduced, and it has already begun to show its initial results”. Since the early years of independence, special attention has been given to the development and popularization of physical education and sports in our country.

The annual work plans developed for planning the content, means, and forms of the training process contain contradictory conclusions. Throughout the annual cycle, training sessions aimed at developing the planned physical qualities, improving technical-tactical preparation, and enhancing competition experience, as well as the traditional approaches to

curriculum design, the organization of training forms and methods during the annual preparation period, the formation of motor skills, and the development of competition experience, have led to conflicting opinions and considerations. The emergence of these contradictions highlights the significance of improving the chosen research topic.

In the stage of preparation for sports improvement, the block-based system of annual planning for speed-strength training differs from the traditional approach by focusing solely on intensive wrestling to address the issue of enhancing a wrestler's explosive power. This involves the use of weights ranging from 70% to 100% of the maximum. During a single mesocycle in the pre-competition period leading up to the year's main competitions, the training process was carried out in a concentrated manner, utilizing intensive weights, with at least two sessions per microcycle.

The aim of the research: to develop proposals and recommendations for improving technical training based on the use of a rotational movement program developed from the arm wrapping and throwing technique of Greco-Roman wrestlers.

The object of the research: the training process with Greco-Roman wrestlers at the Olympic and Paralympic sports preparation center.

The subject of the research: the norms of technical movements and the volume of exercises aimed at teaching them during the training process and competition bouts of Greco-Roman wrestlers.

Research methods: The study utilizes methods such as the analysis and generalization of scientific-methodological literature, pedagogical observation, pedagogical experimentation, and mathematical statistical analysis.

MATERIALS AND METHODS

The ability of wrestlers to maintain static balance under the influence of right-sided rotational dynamic movements indicates a highly underdeveloped capacity to sustain body equilibrium. A crucial aspect is that for these wrestlers, rotating the body and head towards an uncomfortable direction, whether in a neutral stance or a wrestling position, leads to a rapid disruption (loss) of static balance. It is suggested that systematically developing the ability to rotate the head and body towards the less favorable direction through specialized exercises not only enhances the functional capacity of the vestibular analyzer, which controls balance, but also enables wrestlers to execute offensive techniques with equal proficiency on both the right and left sides.

Significant improvements were achieved in wrestlers' attitudes toward competition and their psychological capabilities, including stress tolerance, overcoming fear, managing

anxiety (SCAT), self-confidence, motivation, objective assessment of opponents' abilities, and self-evaluation.

Sport equipment can be used as an additional special auxiliary exercise after the main competition exercises. This set of exercises has a positive impact on enhancing the coordination abilities of freestyle wrestlers, improving the effectiveness of technical-tactical movements, and increasing competition performance indicators.

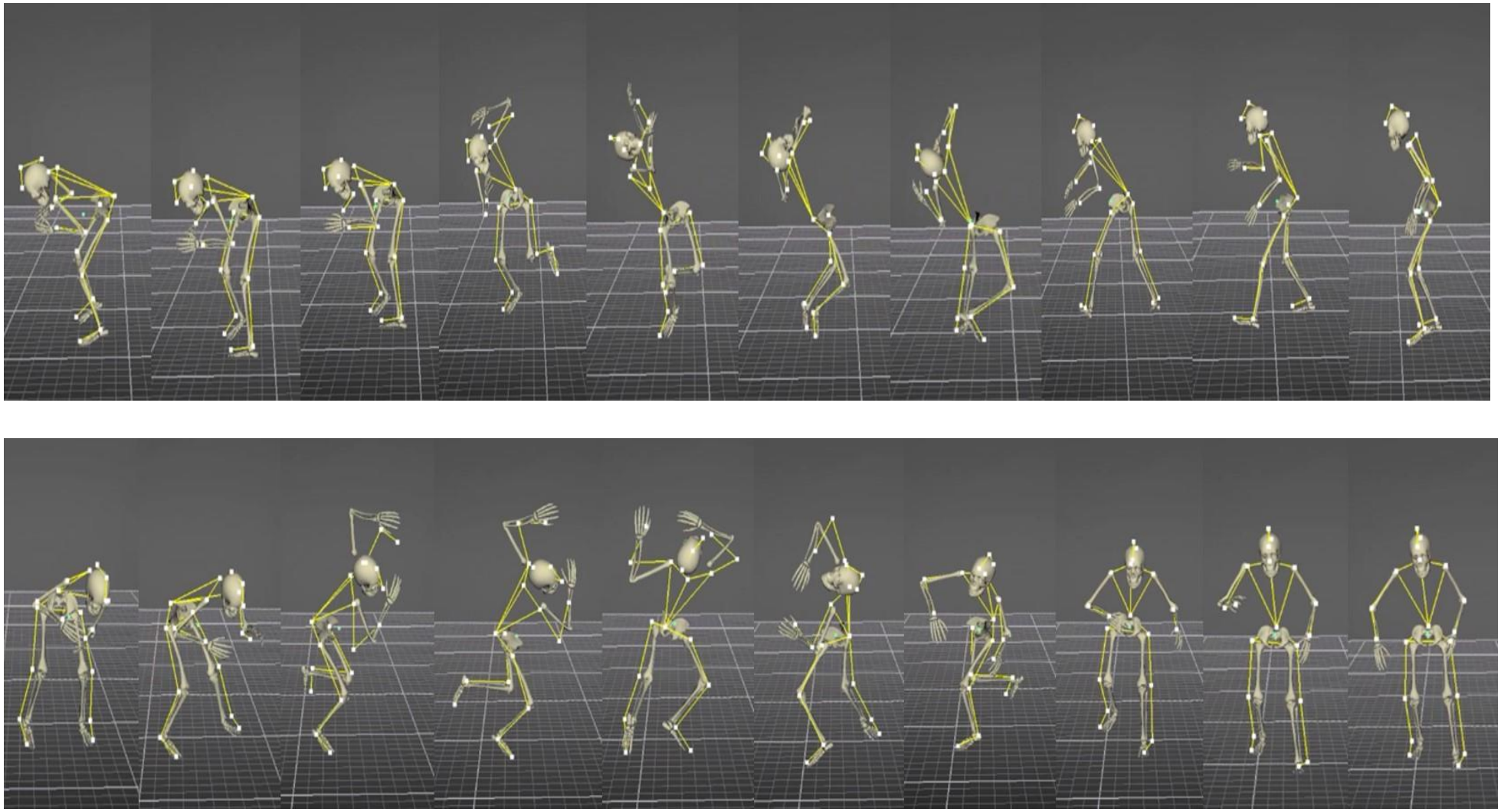
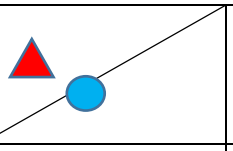


Figure 1. The difference in the degrees of rotation of the torso, waist, and head when performing the arm wrapping and throwing technique to the right from a standing position in Greco-Roman wrestling, viewed from the side and from the front.

Table 1

A set of rotational movements aimed at improving the effectiveness of the arm wrapping and throwing technical techniques from a standing position for Greco-Roman wrestlers.

	1 - Athlete	2 - Athlete	3 - Athlete	4 - Athlete	5 - Athlete	6 - Athlete
 1. - Athlete	Task 1: Perform the shoulder throw technique from a standing position. Quickly return to the initial position.	Task 2: Perform the hip throw technique from a standing position. Quickly return to the initial position.	Task 3: Perform the shoulder throw technique from a standing position. Quickly return to the initial position.	Task 4: Perform the bending throw technique from a standing position. Quickly return to the initial position.	Task 5: Perform the arm wrapping and throwing technique from a standing position by gripping the arm and neck from the front and above. Quickly return to the initial position.	Task 6: Perform the chest throw technique from a standing position. Quickly return to the initial position.
 2. - Athlete	Task 2: Perform the hip throw technique from a standing position. Quickly return to the starting position.	Task 3: Perform the shoulder throw technique from a standing position. Quickly return to the starting position.	Task 4: Perform the bending throw technique from a standing position. Quickly return to the starting position.	Task 5: Perform the arm wrapping and throwing technique from a standing position by gripping the arm and neck from the front and above. Quickly return to the starting position.	Task 6: Perform the chest throw technique from a standing position. Quickly return to the starting position.	Task 1: Perform the shoulder throw technique from a standing position. Quickly return to the starting position.
 3. - Athlete	Task 3: Perform the shoulder throw technique from a standing position. Quickly return to the starting position.	Task 4: Perform the bending throw technique from a standing position. Quickly return to the starting position.	Task 5: Perform the arm wrapping and throwing technique from a standing position by gripping the arm and neck from the front and above.	Task 6: Perform the chest throw technique from a standing position. Quickly return to the starting position.	Task 1: Perform the shoulder throw technique from a standing position. Quickly return to the starting position.	Task 2: Perform the hip throw technique from a standing position. Quickly return to the starting position.

			Quickly return to the starting position.			
 4. - Athlete	Task 4: Perform the bending throw technique from a standing position. Quickly return to the starting position.	Task 5: Perform the arm wrapping and throwing technique from a standing position by gripping the arm and neck from the front and above. Quickly return to the starting position.	Task 6: Perform the chest throw technique from a standing position. Quickly return to the starting position.	Task 1: Perform the shoulder throw technique from a standing position. Quickly return to the starting position.	Task 2: Perform the hip throw technique from a standing position. Quickly return to the starting position.	Task 3: Perform the shoulder throw technique from a standing position. Quickly return to the starting position.
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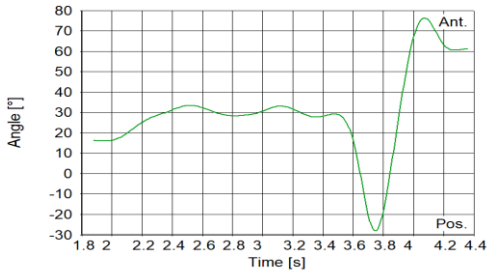
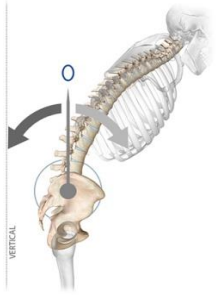
 6. - Athlete	Task 6: Perform the chest throw technique from a standing position. Quickly return to the starting position.	Task 1: Perform the shoulder throw technique from a standing position. Quickly return to the starting position.	Task 2: Perform the hip throw technique from a standing position. Quickly return to the starting position.	Task 3: Perform the shoulder throw technique from a standing position. Quickly return to the starting position.	Task 4: Perform the bending throw technique from a standing position. Quickly return to the starting position.	Task 5: Perform the arm wrapping throw technique from a standing position by gripping the arm and neck from the front and above. Quickly return to the starting position.

RESULTS AND DISCUSSIONS





To the right

Figure 2. The general difference in the oscillation of the wrestler's body around the Y-axis at the waist when performing the arm-wrapping throw technique from a standing position to the right in Greco-Roman wrestling.

In performing the arm-wrapping throw technique from a standing position to the right in Greco-Roman wrestling, the general difference in the oscillation of the wrestler's body around the Y-axis at the waist was observed, with the technique being performed to the right at an angle of -28 degrees. The execution of this technical movement to the right resulted in an angle of 76 degrees. The difference between the minimum and maximum angles during the overall execution was found to be 104 degrees to the right.

The movement of the waist along the Y-axis during the arm-wrapping throw technique from a standing position was found to improve in a similar manner across wrestlers. This, in turn, confirmed that the improvement of the technical movement was consistent, with the motion being specifically enhanced along the Y-axis of the waist.

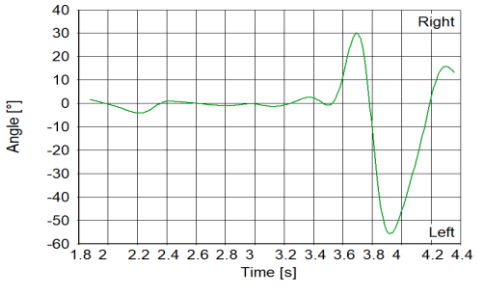


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Figure 3. The general difference in the oscillation

When performing the arm-wrapping throw technique from a standing position to the right in Greco-Roman wrestling, the general difference in the oscillation of the wrestler's body around the X-axis at the waist was observed to bend up to -56 degrees in executing the technique to the right. The upper angle reached a maximum of 30 degrees when performing this technique to the right. The difference between the minimum

of the wrestler's body around the X-axis at the waist when performing the arm-wrapping throw technique from a standing position to the right in Greco-Roman wrestling.

and maximum angle values in the overall performance was determined to be 85 degrees to the right.

The difference between the minimum and maximum angle values in the overall performance was found to be 85 degrees to the right. It was observed that the movement process along the Y-axis of the waist during the execution of the arm-wrapping throw technique from a standing position was improved. This, in turn, confirmed that the technical movement had only improved along the Y-axis of the waist.

It was observed that the movement process along the Y-axis of the waist was improved during the execution of the arm-wrapping throw technique from a standing position. This, in turn, confirmed that the technical movement had improved solely along the Y-axis of the waist.

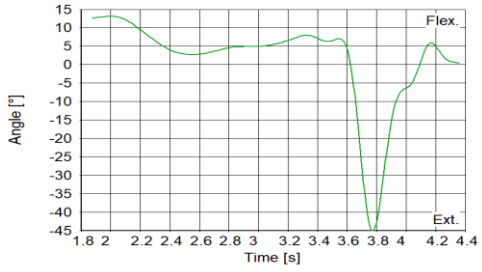

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Figure 4. The general difference in the oscillation of the wrestler's head around the Y-axis of the body when performing the arm-wrapping throw technique from a standing position to the right in Greco-Roman wrestling.

When performing the arm-wrapping throw technique from a standing position to the right in Greco-Roman wrestling, the general difference in the oscillation of the wrestler's head around the Y-axis of the body was observed, with the movement bending up to -45 degrees to the right. The technique's highest angle, when executed to the right, reached 0 degrees. The difference between the minimum and maximum angles in the overall execution was determined to be 44 degrees to the right.

It was determined that when performing the arm-wrapping throw technique to the right from a standing position, the head moved once backward along the Y-axis at nearly identical degrees. This, in turn, indicates that the wrestlers' skill in performing the technique along the Y-axis is very well developed.

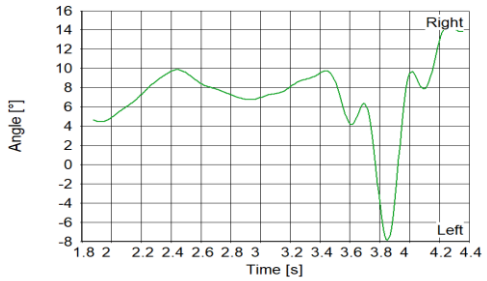

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Figure 5. The general difference in the oscillation of the wrestler's body at the head section along the X-axis when performing the arm-wrapping throw technique to the right from a standing position in Greco-Roman wrestling.

When performing the arm-wrapping throw technique to the right from a standing position in Greco-Roman wrestling, the general difference in the oscillation of the wrestler's body at the head section along the X-axis was observed to be bent up to -8 degrees. The maximum upper angle reached during the execution of this technique to the right was 9 degrees. The difference between the minimum and maximum angles of the general execution was determined to be 17 degrees to the right.

During the execution of this technical movement to the right, it was observed that the head bent to the right along the X-axis twice, performing significant degree movements. This, in turn, allows for the assessment of the wrestler's ability to perform both offensive and defensive movements with the head to a high degree of skill in both directions.

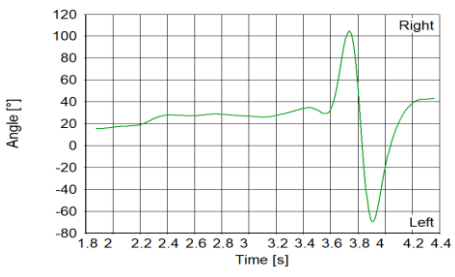

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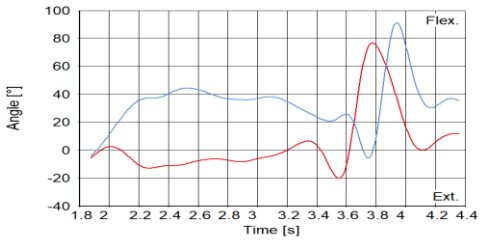
Figure 6. The general difference in the rotation of the wrestler's head along the X-axis when performing the arm-wrapping throw technique to the right from a standing position in Greco-Roman wrestling.

When performing the arm-wrapping throw technique to the right from a standing position in Greco-Roman wrestling, the general difference in the rotation of the wrestler's head along the Y-axis revealed that the technique was bent up to -70 degrees to the right. The upper angle reached a maximum of 104 degrees when performing this technique to the right. It was determined that the difference between the minimum and maximum

angles in the overall performance was 174 degrees to the right.

It was determined that the rotation of the head along the X-axis to the right during the execution of the arm-wrapping throw technique from a standing position to the right reached 174 degrees, which is quite significant. This, in turn, indicates that the wrestler's skill in performing the technical movement to the right is well-developed.



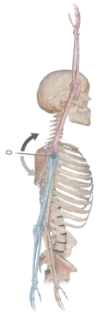


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Figure 7. The general difference in the movement of the wrestler's arms from the front upwards and downwards when performing the arm-wrapping throw technique to the right from a standing position in Greco-Roman wrestling.

When performing the arm-wrapping throw technique to the right from a standing position in Greco-Roman wrestling, the general difference in the movement of the wrestler's arms from the front upwards and downwards revealed that, when performed to the left, the left arm was raised to a minimum of -21 degrees, while the right arm remained at -8 degrees. When performing the same technique to the right, the maximum angle reached for the left arm was 76 degrees, while the right arm reached 91 degrees.

The combination of movements of the arms when raised and lowered in the general execution revealed that the difference between the minimum and maximum ranges was 96 degrees for the left arm and 96 degrees for the right arm. However, when the technique was performed to the right, the right arm showed a variation of 161 degrees. When executing the arm-wrapping throw technique to the right from a standing position in Greco-Roman wrestling, partial differences in the movement combinations of the right arm were observed. The uniformity of arm movements during the execution of the technique indicates that the skill level for performing the technique to the right has been well developed.

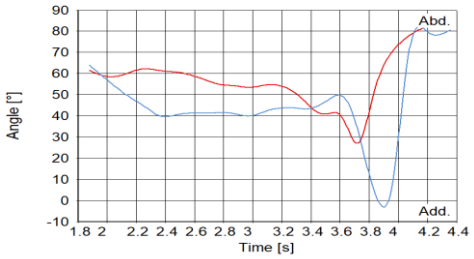

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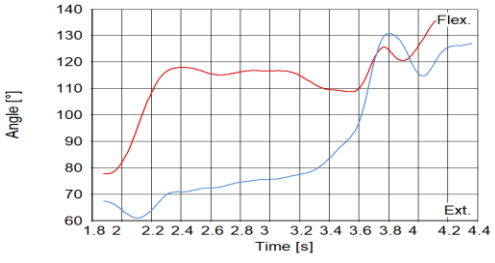
Figure 8. The general difference in the movement of the wrestler's arms from the side, upward, and downward when performing the arm-wrapping throw technique to the right from a standing position in Greco-Roman wrestling.

When performing the arm-wrapping throw technique to the right from a standing position in Greco-Roman wrestling, the general difference in the movement of the wrestler's arms from the side, upward, and downward was observed as follows: when performing the technique to the right, the left arm was raised by 27 degrees, and the right arm by 4 degrees. In performing the technique to the right, the left arm reached 0 degrees, while the right arm reached 49 degrees, showing a noticeable difference.

The combination of movements for raising and lowering the arms in the forward direction during the execution of the technique showed a difference between the minimum and maximum values. When performing the technique to the right, the left arm deviated by -28 degrees, while the right arm deviated by 52 degrees. During the execution of the arm-wrapping throw technique to the right from a standing position in Greco-Roman wrestling, no significant difference was observed in the movement combination of the left and right arms. The consistent movement of the arm combination when performing the technique to the right indicates that the skill level for executing this technique has been well developed.



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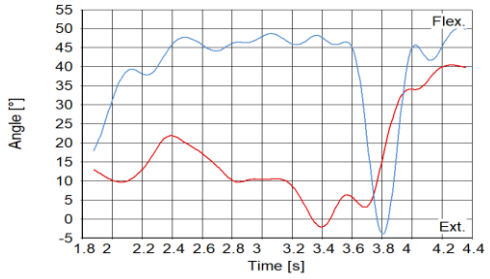
During the execution of the arm-wrapping throw technique to the right from a standing position in Greco-Roman wrestling, the general difference in the bending of the wrestler's wrists was observed. Specifically, when performed to the right, the left wrist bent to 108 degrees, and the right wrist bent to 114 degrees. When performing the technique to the

Figure 9. The general difference in the bending of the wrestler's wrists during the execution of the arm-wrapping throw technique to the right from a standing position in Greco-Roman wrestling.

right, the left wrist bent to 117 degrees, while the right wrist bent to 130 degrees.

The difference between the minimum and maximum ranges of wrist flexion during the execution of the technique was observed. When performed to the right, the left wrist differed by 9 degrees, while the right wrist differed by 16 degrees. It was noted that the wrist flexion states did not correspond to each other during the execution of the technique. The motor skills involved in wrist movements during the technique were found to be highly developed.



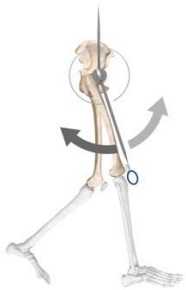


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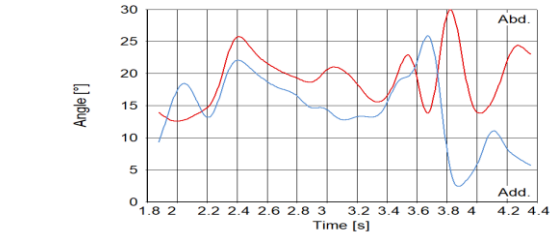
Figure 10. The overall difference in the forward and backward movement of the wrestler's legs during the execution of the arm-wrapping throw technique to the right from a standing position in Greco-Roman wrestling.

During the execution of the arm-wrapping throw technique to the right from a standing position in Greco-Roman wrestling, the general difference in the forward and backward movement of the wrestler's legs was observed as follows: when performed to the right, the left leg was displaced backward by -3 degrees, while the right leg moved forward by -4 degrees. In the same technical movement to the right, the left leg advanced up to 21 degrees, and the right leg, in contrast, moved forward up to 48 degrees.

The combination of movements in lifting and lowering the legs during the execution of the technique, in terms of the minimum and maximum angle differences, showed that when performed to the right, the left leg varied by 23 degrees, while the right leg differed by 52 degrees. The consistency in the movement combination during the execution of the arm-wrapping throw technique from a standing position in Greco-Roman wrestling indicates that the skill level in performing this technique to the right is well-developed.



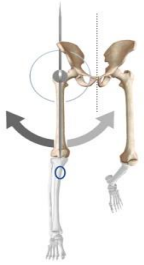


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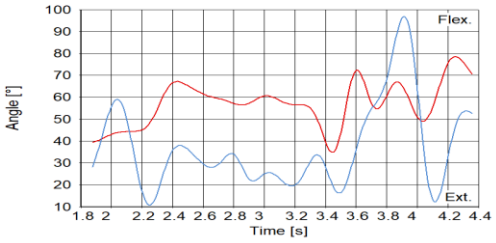
Figure 11. The general difference in the lateral oscillation of the wrestler's legs when performing the arm-wrapping throw technique to the right from a standing position in Greco-Roman wrestling.

When performing the arm-wrapping throw technique to the right from a standing position in Greco-Roman wrestling, the general difference in the lateral oscillation of the wrestler's legs is as follows: during the execution to the right, the left leg was observed to rotate by 13 degrees, while the right leg rotated by 2 degrees. In the execution of this technique to the right, the left leg rotated up to 29 degrees, while the right leg rotated 25 degrees, which was a distinct difference.

The combination of movements for raising and lowering the legs during the general execution, specifically the difference between the minimum and maximum values, revealed that during execution to the right, the left leg rotated up to 16 degrees, while the right leg rotated up to 23 degrees. It was also determined that the movement of the knee section of the legs to the sides during the execution of the arm-wrapping throw technique from a standing position was distinctly different from the ground.



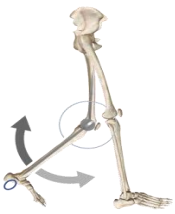


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Figure 12. The general difference in the bending of the wrestler's calf muscles forward and backward

When performing the arm-wrapping throw technique to the right from a standing position in Greco-Roman wrestling, the general difference in the bending of the wrestler's legs is as follows: when executed to the right, the left leg was raised up to 34 degrees, and the right leg was raised up to 10 degrees. In this technical movement to the right, the left leg was lifted up to 78 degrees, while the right leg reached 96 degrees.

when performing the arm-wrapping throw technique to the right from a standing position in Greco-Roman wrestling.

The combination of movements for the bending of the lower leg forward and backward during the overall execution showed a difference between the minimum and maximum angles. When performed to the right, the left leg differed by 43 degrees, while the right leg differed by 86 degrees. It was observed that the bending positions of the lower leg were not proportional to each other when the technical movement was executed.

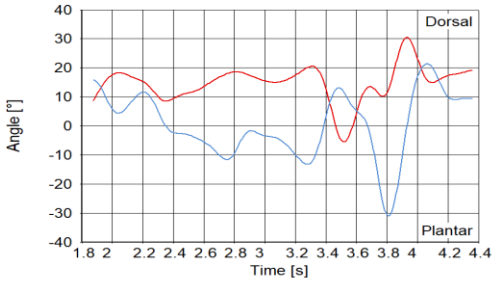

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Figure 13. The general difference in the turning of the wrestler's toe to the right during the execution of the arm-wrapping throw technique from a standing position in Greco-Roman wrestling.

When performing the technical movement of wrapping the foot and hand around the body from a standing position in a Yunon-Roman wrestling stance to the right, the general difference in the swinging of the wrestler's legs to the sides is as follows: when performing the movement to the right, the left foot was observed to rotate 6 degrees to the left, while the right foot rotated 31 degrees to the left. In contrast, when performing the same movement to the right, the left foot did not change its position, maintaining a 30-degree angle, whereas the right foot turned 21 degrees in the opposite direction.

The differences in the range of motion of the foot tips turning to the sides at minimum and maximum angles when performing the movement to both sides were as follows: when the movement was performed to the right, the left foot tip rotated up to 35 degrees, while the right foot tip rotated up to 52 degrees. It was also determined that the movement of the knee portions of the legs to the sides while performing the technique of wrapping the hand around the body from a standing position was identical for both wrestlers.

CONCLUSION

In our scientific research, it was observed that the skill level of U20 Yunon-Roman wrestlers in performing the technique of wrapping the hand around the body from a standing

position was unsatisfactory at the beginning of the study when compared to the standard level of certain movements identified in the control group. This issue was also observed in the experimental group. By the end of the study, the ability to perform this technical movement to the right increased by 6% in the control group. In the experimental group, however, the skill of performing the movement to the right improved by 8%.

In the scientific research involving U23 Yunon-Roman wrestlers, the skill level in performing the technique of wrapping the hand around the body from a standing position was unsatisfactory at the beginning of the study when compared to the standard level of certain movements identified in the control group. This issue was also observed in the experimental group. By the end of the study, the ability to perform this technical movement to the right increased by 4% in the control group. In the experimental group, the ability to perform the movement to the right improved by 9%.

In the scientific research involving senior-level Yunon-Roman wrestlers, the skill level in performing the technique of wrapping the hand around the body from a standing position was unsatisfactory at the beginning of the study when compared to the standard level of certain movements identified in the control group. This issue was also observed in the experimental group. By the end of the study, the ability to perform this technical movement to the right increased by 4% in the control group. In the experimental group, however, the ability to perform the movement to the right improved by 6%.

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