EXPERT ASSESSMENT OF TECHNICAL PREPAREDNESS INDICATORS OF QUALIFIED GRECO-ROMAN WRESTLERS AT THE STAGE OF SPECIALIZED BASIC TRAINING

Voronyi Vladislav[1], Lukina Olena[1], Kovalenko Nina[1], Kusovska Olga[1], Chykolba Hennadii[2], Ungurean Bogdan[3]
[1]Prydniprovsk State Academy of Physical Culture and Sport
[2]University of Customs and Finance
[3]"Alexandru loan Cuza" University of lasi

DOI: 10.32540/2071-1476-2021-1-018

Annotation

Purpose: to determine the quality of technical actions of qualified Greco-Roman wrestlers at the stage of specialized basic training. **Material and methods:** method of expert evaluation; methods of mathematical statistics. **Results:** The results of the study showed that the experts evaluated the technical actions in standing position, which were performed by qualified wrestlers of the experimental group before the pedagogical experiment, not higher than 3.65 points. After the pedagogical experiment, four technical actions received average scores above four points: turn down - 4.27 points, hip throw - 4.15, dumping - 4.13 and pushing out of the mat - 4.00 points, respectively. It indicates a significant improvement in the quality of technical actions by the wrestlers of the experimental group ($p < 0.01$). In the athletes of the control group, when performing technical actions in standing position, the expert assessment did not exceed 3.98 points (turn down). The experts rated the quality of technical actions in the referee's position by the wrestlers of the experimental group with higher scores than at the beginning of the pedagogical experiment, where the best score was 3.78 points (holding in the referee's position). After conducting a pedagogical experiment, for technical actions: turn-over with body-hold, back belt throw and holding in the referee's position, the athletes of the experimental group received average scores of 4.45, 4.05 and 4.32 points, respectively. It indicates a significant improvement in the quality of technical actions by the wrestlers of the experimental group ($p < 0.01$). The wrestlers of the control group also increased their indicators of expert evaluation, but significantly less than the athletes of the experimental group (the highest score - 3.98). **Conclusions:** It was found that according to the indicators of expert assessment on a 5-point scale after the pedagogical experiment, the quality of the performance of all technical actions among the wrestlers of the experimental and control groups increased. However, the increase in the indicators of values is higher among the athletes of the experimental group. When performing technical actions in a standing position, the wrestlers of the experimental group improved their results in the range from 13.69% to 23.64%; control group athletes - from 6.61% to 9.37%. When performing technical actions in the referee's position, the athletes of the experimental group increased their indices in the range from 13.44% to 27.50%; control group athletes - from 2.22% to 9.54%. It indicates a significant improvement in the quality of technical actions performance by the wrestlers of the experimental group ($p < 0.01$) in comparison with the athletes of the control group.

Key words: expert assessment of technical preparedness of Greco-Roman style wrestlers; holds in the standing position; holds in the referee's position; stage of specialized basic training.

Анотація

Мета: визначити якість виконання технічних дій кваліфікованих борців греко-римського стилю на етапі спеціалізованої базової підготовки. **Матеріал і методи:** метод експертної оцінки; методи математичної статистики. Результати: результати дослідження показали, що експертами технічні дії в стійці, які вико-

нувались кваліфікованими борцями експериментальної групи до проведення педагогічного експерименту, оцінювались не вище 3,65 балів. Наприкінці педагогічного експерименту чотири технічні дії отримали середні оцінки вище чотирьох балів: перевод у партер – 4,27 балів, кидок підворотом – 4,15, звалювання – 4,13 та виштовхування за килим – 4,00 бали відповідно. Це свідчить про значне покращання якості виконання технічних дій борцями експериментальної групи ($p<0,01$). У спортсменів контрольної групи при виконанні технічних дій в стійці експертна оцінка не перевищувала 3,98 балів (перевод у партер). Експерти оцінили якість виконання технічних дій в партері борцями експериментальної групи більш високими балами, ніж на початку педагогічного експерименту, де краща оцінка – 3,78 балів (утримання у партері). Після проведення педагогічного експерименту, за технічні дії: переворот накатом, кидок заднім поясом та утримання у партері, спортсмени експериментальної групи отримали середні оцінки в 4,45, 4,05 та 4,32 балів відповідно. Це свідчить про значне покращання якості виконання технічних дій борцями експериментальної групи ($p<0,01$). Борці контрольної групи також покращали свої показники експертної оцінки, але значно менше ніж спортсмени експериментальної групи (самий високий бал – 3,98). **Висновки:** Встановлено, що за показниками експертної оцінки за 5-ти бальною шкалою після проведення педагогічного експерименту, якість виконання всіх технічних дій у борців експериментальної та контрольної груп зросла. Однак приріст показників значно вище у спортсменів експериментальної групи. При виконанні технічних дій в стійці борці експериментальної групи покращили свої результати в межах від 13,69% до 23,64%; спортсмени контрольної групи – від 6,61% до 9,37%. При виконанні технічних дій у партері спортсмени експериментальної групи збільшили показники у межах від 13,44% до 27,50%; спортсмени контрольної групи – від 2,22% до 9,54%. Це свідчить про значне покращання якості виконання технічних дій борцями експериментальної групи ($p<0,01$) у порівнянні зі спортсменами контрольної групи.

Ключові слова: експертна оцінка технічної підготовленості борців греко-римського стилю; прийоми в стійці; прийоми у партері; етап спеціалізованої базової підготовки.

Аннотация

Цель: определить качество выполнения технических действий квалифицированных борцов греко-римского стиля на этапе специализированной базовой подготовки. **Материал и методы:** метод экспертной оценки; методы математической статистики. **Результаты:** результаты исследования показали, что экспертами технические действия в стойке, которые выполнялись квалифицированными борцами экспериментальной группы до проведения педагогического эксперимента, оценивались не выше 3,65 балов. После педагогического эксперимента четыре технических действия получили средние оценки выше четырех баллов: перевод в партер – 4,27 баллов, бросок подворотом – 4,15, сваливание – 4,13 и выталкивание за ковер – 4,00 балла соответственно. Это свидетельствует про значительное улучшение качества выполнения технических действий борцами экспериментальной группы ($p<0,01$). У спортсменов контрольной группы, при выполнении технических действий в стойке, экспертная оценка не превышала 3,98 баллов (перевод в партер). Эксперты оценили качество выполнения технических действий в партере борцами экспериментальной группы более высокими баллами, чем в начале педагогического эксперимента, где лучшая оценка – 3,78 баллов (удержание в партере). После проведения педагогического эксперимента, за технические действия: переворот накатом, бросок задним поясом и удержание в партере, спортсмены экспериментальной группы получили средние оценки в 4,45, 4,05 и 4,32 баллов соответственно. Это свидетельствует про значительное улучшение качества выполнения технических действий борцами экспериментальной группы ($p<0,01$). Борцы контрольной группы также повысили свои показатели экспертной оценки, но значительно меньше чем спортсмены экспериментальной группы (наивысший балл – 3,98). **Выводы:** Установлено, что по показателям экспертной оценки по 5-ти балльной шкале после проведения педагогического эксперимента, качество выполнение всех технических действий у борцов экспериментальной и контрольной группы возросла. Однако прирост показателей значений выше у спортсменов экспериментальной группы. При выполнении технических действий в стойке борцы экспериментальной группы улучшили свои результаты в пределах от 13,69% до 23,64%; спортсмены контрольной группы – от 6,61% до 9,37%. При исполнении технических действий в партере спортсмены экспериментальной группы увеличили показатели в пределах от 13,44% до 27,50%; спортсмены контрольной группы – от 2,22% до 9,54%. Это свидетельствует о значительном улучшении качества выполнения технических действий борцами экспериментальной группы ($p <0,01$) по сравнению со спортсменами контрольной группы.

Ключевые слова: экспертная оценка технической подготовленности борцов греко-римского стиля; приёмы в стойке; приёмы в партере; этап специализированной базовой подготовки.

Introduction. One of the main tasks of optimizing the training process of wrestlers is to determine the main factors of differentiation and individualization, which directly affect the achievement of the athletes the highest result in competitions of different levels [V.O. Andriytzev, 2016; S.V. Kalmykov, 1994; O.V. Lukina, V.O. Voronyi, 2019; O.V. Lukina, S.G. Strelchyk, K. Gandziarski, E. Puszczalowska-Lizis, 2019; J.M. Tropin, 2016].

As it is noted by experts in martial arts [G.V. Korobeynikov, S.V. Latushev, N.V. Latushev, A. Y. Goraschenko, L. G. Orobeynikova, 2016; Y.A. Radchenko, 2011; J.M. Tropin, 2016; JG Pallares, JM Lopez, GX Muriel, AD Mikel Izquierdo, 2011], the current level of Greco-Roman wrestling is characterized by significant competition, resulting in increasing demands on the manifestation of physical and moral qualities of athletes, which is the basis of a high level of technical training, which allows to perform effective techniques in competition [V.O. Andriytzev, 2016; G.V. Korobeynikov, S.V. Latushev, N.V. Latushev, A. Y. Goraschenko, L. G. Orobeynikova, 2016; S.V. Latushev, 2014; V. Savchenko, O. Lukina, N. Kovalenko, O. Mikitchik, 2017; B. Mirzaei, N. Akbar, 2008].

In martial arts, the principle of individualization is of particular importance because a high sport result can be achieved in different ways of conducting a competitive match [S.S. Ermakov, Y.N. Tropin, V.A. Ponomaryev, 2015; O.V. Lukina, V.O. Voronyi, 2019; J.M. Tropin, 2016; Ozkan Light, Khalil Ibrahim Cicioglu, Mehmet Gul, Berkan Alpay, 2017; H. Tunnemann, 2013]. Experts in wrestling distinguish three basic styles of fighting: power, tempo and game [K.V. Ananchenko, 2008; B. Goranov, 2011; J.M. Tropin, 2016].

Leading wrestling experts believe that the individual style of the athlete's conducting the fight is significantly formed at the stage of specialized basic training. In the process of training at this stage the main tasks for the development of basic and special physical qualities, improving the technical and tactical preparedness of the athlete are solved. It all contributes to the formation of a stable and reliable individual style of competitive competition [G.V. Korobeynikov, S.V. Latushev, N.V. Latushev, A. Y. Goraschenko, L. G. Orobeynikova, 2016; J.M. Tropin, 2016; V.V. Shazkich, 2012].

Modern Greco-Roman wrestling refers to those sports in which there is the search for optimal rules of competition and, as a consequence, methods of competitive training in order to increase the effectiveness of technical and tactical preparedness of wrestlers and the overall staginess of competition [K.V. Ananchenko, 2008; S.V. Kalmykov, 1994; O.V. Lukina, V.O. Voronyi, 2019; O.V. Lukina, S.G. Strelchyk, K. Gandziarski, E. Puszczalowska-Lizis, 2019; J.M. Tropin, 2016].

Due to these factors, the technical and tactical arsenal of qualified wrestlers has recently changed, which requires them to better reproduce technical actions in a competitive duel.

The purpose of the study is to determine the quality of technical actions of qualified Greco-Roman wrestlers at the stage of specialized basic training.

Material and methods.

Participants. Testing of indicators of technical preparedness of qualified Greco-Roman style wrestlers at the stage of specialized basic training was carried out. Qualification of athletes - Ist sport category and Candidate Masters. The number - 30 Greco-Roman wrestlers aged 16-17, who were divided into ex-

Table 1

Criteria for assessing the technical skills of the wrestler when performing technical holds

Points	Criteria for assessing technical acceptance
5	The technical action is performed clearly, together, without stops, with maximum amplitude and fixation in the final phase.
4	The technical action is performed with slight delays, with insufficient density of capture when performing the hold and keeping the opponent in the final phase.
3	Technical action is performed with significant delays, captures are disrupted when performing the hold and keeping the opponent in the final phase.
2	The technical action is performed slowly and inaccurately, with incomplete amplitude of movement, with a rupture of capture and without control of the opponent in the final phase.
1	The technical action is performed slowly and inaccurately, with incomplete amplitude of movement, with a rupture of capture and without control of the opponent in the final phase, which leads to the loss of balance of the wrestler who conducts the hold.

Table 2

Expert assessment of technical actions of qualified Greco-Roman style wrestlers of experimental (n = 15) and control groups (n = 15) to pedagogical experiment

Technical actions, points	Groups	X + m	t	p
Standing position				
Turn down	CG	3,65 ± 0,07	-0,441	p>0,05
	EG	3,60 ± 0,08		
Drop-back	CG	3,20 ± 0,09	-0,475	p>0,05
	EG	3,13 ± 0,10		
Hip throw	CG	3,63 ± 0,09	0,132	p>0,05
	EG	3,65 ± 0,08		
Dumping	CG	3,47 ± 0,08	0,155	p>0,05
	EG	3,48 ± 0,07		
Pushing out of the mat	CG	3,43 ± 0,07	0,163	p>0,05
	EG	3,45 ± 0,07		
Counter-grip	CG	2,88 ± 0,04	-0,263	p>0,05
	EG	2,87 ± 0,04		
Referee's position				
Turn-over with body-hold	CG	3,78 ± 0,06	-0,292	p>0,05
	EG	3,75 ± 0,09		
Reverse belt turn	CG	2,87 ± 0,10	-0,490	p>0,05
	EG	2,80 ± 0,08		
Back belt throw	CG	3,60 ± 0,07	-0,290	p>0,05
	EG	3,57 ± 0,09		
Reverse belt throw	CG	2,83 ± 0,07	0,294	p>0,05
	EG	2,87 ± 0,08		
Holding	CG	3,77 ± 0,07	0,155	p>0,05
	EG	3,78 ± 0,07		
Counter-grip	CG	2,93 ± 0,07	0,530	p>0,05
	EG	2,98 ± 0,06		

perimental (15 athletes) and control (15 athletes) groups.

Organization of the study. To determine the quality of technical actions of Greco-Roman wrestlers, an expert assessment of these indicators was used at the beginning and end of the pedagogical experiment, which was conducted at the Prydniprovsk State Academy of Physical Culture and Sport at the Department of Boxing, Wrestling and Weightlifting of PSAPC&S, Dynamo Municipal out-of-school educational institution "Complex children's and youth sports school "Dynamo" of the Dnieper city council, Communal institution "Dniepropetrovsk Professional College of Sports" of the Dniepropetrovsk Regional Council (Dnipro).

Determination the quality of mastery of the technical actions of Greco-Roman wrestling was held with the help of expert assessments of the following technical actions:

1) in the standing position – turn down, drop-back, hip throw, dumping, push out of the mat, counter-hold in the standing position;

2) in the referee's position – turn-over with body-hold, reverse belt turn, a back belt turn, a back belt throw, holding, counter-hold in the referee's position.

These techniques are the main technical arsenal of modern competitive activities of highly qualified Greco-Roman wrestlers and are the content of technical training in the curriculum for sport scools [Greco-Roman wrestling, 2010; S.S. Ermakov, Y.N. Tropin, V.A. Ponomaryev, 2015; G.V. Korobeynikov, S.V. Latushev, N.V. Latushev, A. Y. Goraschenko, L. G. Orobeynikova, 2016; J.M. Tropin, 2016].

The quality of technical performances was assessed on a five-point scale by a group of experts. In total, four experts were involved: two - judges of international category, two - national category (of them: one – the head coach of the youth national team of Ukraine, HMS; two - honored coaches of Ukraine, head coaches of the national team of Dnipropetrovsk region, MS). Performance of holds was evaluated by experts depending on the quality of technical actions and the following indicators we3re taken into account: preparation for the hold performing, speed of entry into the throw, speed of a hold performance, amplitude and trajectory of the hold, asymmetry of performing, statodynamic stability during a hold, different kinds of holds, quality of the partner's fall on the carpet, the final phase of the technical action, etc. (Table 1).

The consistency of the experts was assessed by calculating the Kendall concordance coefficient (W).

Statistical analysis. Processing and analysis of expert assessment of technical preparedness of qualified Greco-Roman wrestlers was carried out using integrated statistical and graphical packages "MS Excel-7" and "Statistica-9.0".

Research results.

Expert assessment for technical actions of qualified wrestlers are presented in table. 2.

Table 3

Expert assessment of technical performances of qualified wrestlers in the Greco-Roman style of the experimental (n = 15) and control groups (n = 15) for the pedagogical experiment

Technical actions, points	Groups	X + m	t	p
Standing position				
Turn down	CG	3,98 ± 0,08	2,822	p<0,05
	EG	4,27 ± 0,05		
Drop-back	CG	3,50 ± 0,06	3,076	p<0,01
	EG	3,87 ± 0,09		
Hip throw	CG	3,87 ± 0,08	2,555	p<0,05
	EG	4,15 ± 0,07		
Dumping	CG	3,78 ± 0,08	2,885	p<0,05
	EG	4,13 ± 0,08		
Pushing out of the mat	CG	3,70 ± 0,07	3,263	p<0,01
	EG	4,00 ± 0,06		
Counter-grip	CG	3,13 ± 0,05	2,991	p<0,01
	EG	3,38 ± 0,05		
Referee's position				
Turn-over with body-hold	CG	3,98 ± 0,06	5,374	p<0,05
	EG	4,45 ± 0,06		
Reverse belt turn	CG	3,12 ± 0,09	3,465	p<0,01
	EG	3,57 ± 0,09		
Back belt throw	CG	3,68 ± 0,05	3,797	p<0,05
	EG	4,05 ± 0,07		
Reverse belt throw	CG	3,10 ± 0,06	3,470	p<0,05
	EG	3,50 ± 0,09		
Holding	CG	3,95 ± 0,07	3,389	p<0,01
	EG	4,32 ± 0,07		
Counter-grip	CG	3,12 ± 0,05	6,254	p<0,01
		3,55 ± 0,04		

When analyzing the obtained data, it was found that according to the indicators of expert evaluation on a 5-point scale, all technical actions of the athletes of the experimental and control groups before the pedagogical experiment were at the same level. It indicates the homogeneity of the studied samples (p> 0.05).

It should be noted that the highest technical assessment was received by the following technical actions performed by athletes of the experimental and control groups: turn down (standing), hip throw (standing), turn-over with body-hold (referee's position), holding (referee's position). These technical actions are the most common and easy to perform by Greco-Roman style wrestlers.

On average, the experts evaluated the performance by the wrestlers the main technical actions in the standing position and on the referee's position not higher than four points, where the arithmetic mean is from 3.78 to 2.80 points. Performing more complex in the technical aspect of motor tasks (counter-grip in the standing position and in the referee's position, reverse belt turn in the referee's position, reverse belt turn in the referee's position throw), experts estimated the lowest score among all indicators - from 2.98 to 2.80.

After the pedagogical experiment, the expert assessment of the technical actions of qualified Greco-Roman wrestlers was repeated (Table 3).

When analyzing the data obtained after the pedagogical experiment, it was found that according to the indicators of expert assessment on a 5-point scale, the quality of all technical actions of the wrestlers of the experimental and control groups increased. However, it should be noted that the increase in performance is significantly higher in athletes of the experimental group compared with the control one (p <0,05).

Thus, when performing technical actions in the standing position, the wrestlers of the experimental group enhanced their results in the range from 13.69% to 23.64% (Table 3). The largest increase in performance is observed when athletes perform a drop-back - by 23.64% (p <0.01), dumping - 18.67%, turn down - 18.61% and counter-grip in the standing position - 17.77%.

It should be noted that the experts evaluated the technical actions in the standing position, which were performed by qualified wrestlers of the experimental group before the pedagogical experiment, not higher than 3.65 points. And at the end of the pedagogical experiment, four technical actions received average scores above four points: turn down - 4.27, hip throw - 4.15, dumping - 4.13 and pushing out of the mat - 4.00 points, respectively. It indicates a significant improvement in the quality of technical actions by the wrestlers of the experimental group (p <0.01).

Athletes of the control group also improved the performance of

Table 4

Increase in indicators of expert assessment of technical actions of qualified Greco-Roman style wrestlers of experimental (n = 15) and control groups (n = 15) before and after pedagogical experiment

Technical actions, points	Technical actions, points	Expert assessment indicator		Increase	
		before	after	Absolute values	%
Standing position					
Turn down	CG	3,65	3,98	0,33	9,04
	EG	3,60	4,27	0,67	18,61
Drop-back	CG	3,20	3,50	0,30	9,37
	EG	3,13	3,87	0,74	23,64
Hip throw	CG	3,63	3,87	0,24	6,61
	EG	3,65	4,15	0,50	13,69
Dumping	CG	3,47	3,78	0,31	8,93
	EG	3,48	4,13	0,65	18,67
Pushing out of the mat	CG	3,43	3,70	0,27	7,87
	EG	3,45	4,00	0,55	15,94
Counter-grip	CG	2,88	3,13	0,25	8,68
	EG	2,87	3,38	0,51	17,77
Referee's position					
Turn-over with body-hold	CG	3,78	3,98	0,20	5,29
	EG	3,75	4,45	0,70	18,66
Reverse belt turn	CG	2,87	3,12	0,25	8,71
	EG	2,80	3,57	0,77	27,50
Back belt throw	CG	3,60	3,68	0,08	2,22
	EG	3,57	4,05	0,48	13,44
Reverse belt throw	CG	2,83	3,10	0,27	9,54
	EG	2,87	3,50	0,63	21,95
Holding	CG	3,77	3,95	0,18	4,77
	EG	3,78	4,32	0,54	14,28
Counter-grip	CG	2,93	3,12	0,19	6,48
	EG	2,98	3,55	0,57	19,12

all technical actions in the standing position after the pedagogical experiment, but much less than the athletes of the experimental group (Table 3). Thus, the largest increase is observed when performing a turn down (9.04%, average score - 3.98), drop-back (9.37%, average score - 3.50), dumping (8.93%, average score – 3.78) and counter-grip in the standing position (8.68%, average score - 3.13). As it can be seen from Table 3 the average score of technical actions in the standing position for wrestlers of the control group does not exceed 3.98 points.

Regarding the performance of technical actions by qualified wrestlers in the referee's position, the athletes of the experimental group improved their results in the range from 13.44% to 27.50% (Table 3).

The largest increase in performance is observed when athletes perform a the reverse belt turn - by 27.50% ($p < 0.01$), the reverse belt throw - 21.95%, counter-grip in the referee's position - 19.12% and the turn-over with body-hold - 18.66%.

Experts rated the quality of technical actions in the referee's position by wrestlers of the experimental group with higher scores than at the beginning of the pedagogical experiment, where the best score - 3.78 points was when performing the technical action of holding in the referee's position. After conducting the pedagogical experiment, for such technical actions as a turn-over, back belt throw and holding in the referee's position, the athletes of the experimental group received average scores of 4.45, 4.05 and 4.32 points, respectively. It indicates a

Table 5

Indicators of the concordance coefficient when evaluated by experts (n = 4) technical preparedness of qualified wrestlers of experimental (n = 15) and control groups (n = 15)

Technical action	Criterion W Kendall			
	Before the experiment		After the experiment	
	EG	CG	EG	CG
Standing position				
Turn down	0,62	0,64	0,79	0,79
Drop-back	0,83	0,73	0,84	0,68
Hip throw	0,83	0,83	0,84	0,73
Dumping	0,68	0,83	0,83	0,71
Pushing out of the mat	0,70	0,73	0,82	0,61
Counter-grip	0,84	0,85	0,75	0,71
Referee's position				
Turn down	0,75	0,73	0,78	0,66
Drop-back	0,66	0,86	0,88	0,83
Hip throw	0,61	0,65	0,71	0,59
Dumping	0,55	0,86	0,86	0,68
Pushing out of the mat	0,63	0,48	0,80	0,68
Counter-grip	0,56	0,70	0,72	0,70
$\overline{x}$	0,688	0,741	0,802	0,698

significant enhance in the quality of technical actions by the wrestlers of the experimental group ($p < 0.01$).

The wrestlers of the control group also increased their indicators of expert evaluation, but much less than the athletes of the experimental group (Table 3).

Thus, the largest increase is observed when performing the reverse belt throw (9.54%, average score - 3.10), the reverse belt reverse (8.71%, average score - 3.12) and counter-grip in the referee's position (6.48%, average score - 3.12). As it can be seen in table. 4, the average score of the quality of technical actions in the referee's position of the wrestlers of the control group does not exceed 3.95 points.

The consistency of the experts' assessment (n = 4) of the technical preparedness of qualified Greco-Roman wrestlers was confirmed by the values of the concordance coefficient for the pedagogical experiment in the experimental (Wm = 0.688; $p < 0.05$) and control groups (Wm = 0.741 $p < 0.05$); after the pedagogical experiment in the experimental (Wm = 0.802; $p < 0.05$) and control groups (Wm = 0.698 $p < 0.05$) (Table 5).

As it can be seen from the data obtained (Table 2), before the pedagogical experiment, all indicators of technical actions were at the same level both athletes in the control and experimental groups on the indicators of expert assessment on a 5-point scale, indicating the homogeneity of the studied samples ($p > 0.05$).

However, after the pedagogical experiment, the technical indicators of the wrestlers of the control and experimental groups differ. The obtained indicators show significant differences ($p < 0,05$), the values of t range from 2,822 to 6,254 (Table 3).

Discussion.

Thus, the obtained data of expert assessment of technical preparedness before and after the formation experiment, allowed to state that the athletes of the experimental group improved their performance of technical actions significantly more than the athletes of the control one. This fact, in our opinion, indicates the effectiveness of the offered experimental program to increase the level of special physical fitness of Greco-Roman wrestlers at the stage of specialized basic training, which helped to improve the quality of technical and tactical actions of athletes.

The data obtained are confirmed by the data of leading experts in wrestling [V.O. Andriytzev, 2016; G.V. Korobeynikov, S.V. Latushev, N.V. Latushev, A. Y. Goraschenko, L. G. Orobeynikova, 2016; S.V. Latushev, 2014; J.M. Tropin, 2016; H. Tunnemann, 2013].

Conclusions.

1. The quality of performance of technical actions of qualified Greco-Roman wrestlers at the stage of specialized basic training is investigated. The obtained data corresponded to the normal distribution law, and data sets were processed by standard methods of mathematical statistics.

2. In the analysis of the obtained data it was established that according to the indicators of expert evaluation all technical actions of the athletes of the experimental and control groups before the pedagogical experiment were at the same level. The highest technical assessment was given to the following technical actions: turn down (standing position), hip throw (standing position), turn-over with body-hold (referee's position), holding (referee's position). These technical actions are the most common and easy to perform Greco-Roman style fighters.

On average, the experts evaluated the performance of the wrestlers of the main technical actions in the standing position and on the referee's position not higher than four points, where the arithmetic mean is from 3.78 to 2.80 points. Execution

of complex technical actions (counter-grip in the standing position and in the referee's position, reverse belt turn in the referee's position, the reverse belt throw in the referee's position) was estimated by experts to be almost the lowest among all indicators - from 2.98 to 2.80.

3. After the pedagogical experiment, it was found that according to the indicators of expert evaluation on a 5-point scale, the quality of all technical actions of the wrestlers of the experimental and control groups has increased. However, it should be noted that the increase in performance is significantly higher in athletes of the experimental group compared with the control ($p < 0,05$).

Thus, when performing technical actions in the standing position, the wrestlers of the experimental group improved their results in the range from 13.69% to 23.64%; athletes of the control group - from 6.61% to 9.37%. When performing technical actions in the referee's position, the athletes of the experimental group increased the indicators from 13.44% to 27.50%; athletes of the control group - from 2.22% to 9.54%.

It indicates a significant improvement in the quality of technical actions by wrestlers in the experimental group ($p < 0.01$) compared with athletes in the control group.

Gratitude

The study was conducted in accordance with the Thematic Plan of Scientific Research of Prydniprovsk State Academy of Physical Culture and Sport for 2016-2020 on the subject: "Theoretical and methodological foundations for improving the training process and competitive activities at different stages of training athletes", state registration number 0116U003007.

Conflict of interests

The authors declare no conflict of interests.

Література

1. Ананченко К.В. Визначення індивідуальних тактичних манер ведення сутички у дзюдоїстів високого класу. Слобожанський науково-спортивний вісник. Харьків: ХДАФК. 2008. № 4. С. 53-57.
2. Андрійцев В.О. Удосконалення техніко-тактичних дій борців вільного стилю на етапі спеціалізованої базової підготовки: автореф. дис. на соискание учен. степени канд. физ. воспитания и спорта: спец. 24.00.01. «Олімпійський і професійний спорт». Київ., 2016. 22 с.
3. Горанов Б. Методика подготовки борцов высокой квалификации в греко-римской борьбе на основе сочетания индивидуального стиля соревновательной деятельности и совершенствования излюбленных технико-тактических действий. Ученые записки университета имени П.Ф. Лесгафта. 2011. № 9 (79). С. 58-62.
4. Греко-римська боротьба: Навчальна програма для дитячо-юнацьких спортивних шкіл, спеціалізованих дитячо-юнацьких спортивних шкіл олімпійського резерву, шкіл вищої спортивної майстерності та спеціалізованих навчальних закладів спортивного профілю. К., 2010. 60 с.
5. Ермаков С.С., Тропин Ю.Н., Пономарев В.А. Пути совершенствования технико-тактического мастерства борцов греко-римского стиля различных манер ведения поединка. Слобожанський науково-спортивний вісник, 2015. № 5. С. 46-51.
6. Калмыков С.В. Основы индивидуализации подготовки спортсменов единоборцев. Улан-Удэ.: Бурят. кн. изд-во, 1994. 142 с.
7. Коробейников Г.В., Латышев С.В., Латышев Н.В., Гораценко А.Ю., Коробейникова Л.Г. Об-

References

1. Ananchenko K.V. (2008) Vyznachenya indyvidualnyh taktychnyh maner vedenya sytychky y dzjdoistiv vysokogo klasy. [Determination of individual tactical manners of fighting in high-end judo players]. Slobozhanskyi Herald of Science and Sport. Kharkiv: KSAPK. № 4. P. 53-57. (in Ukrainian)
2. Andriytzev V.O. (2016) Udoskonalennya tehnicotaktychnyh diy borziv vilnogo stulyu na etapi specializovanoy bazovoy pidgotovki [Improvement of technical and tactical actions of free style fighters at the stage of specialized basic training]: author. dis. … cand. scientist of physical education and sport: (special.) 24.00.01. "Olympic and professional sport". Kiev. 22 p. (in Ukrainian)
3. Goranov B. (2011) Metodika podgotovki borzov vysokoy kvalifikazii v greko-rimskoy borbe na osnove sochetanija individyalnogo stilya sorevnovatelnoy deyatelnosti i sovershenstvovania izljublenyuh tehniko-takticheskyih deystviy [The methodology of training highly qualified wrestlers in Greco-Roman wrestling based on a combination of the individual style of competitive activity and the improvement of favorite technical and tactical actions]. Scientific notes of the University named after P.F. Lesgaft. № 9 (79). P. 58-62. (in Russian)
4. Greko-rymska borotba (2010): Navchalna programma dlya dityacho-yunatckyh sportyvnyh shkil, specializovanyh dityacho-yunatckyh sportyvnyh shkil olimpiyskogo rezervy, shkil vyshoy sportyvnoy maysternosti ta specializovanyh navchalnyh zakladiv sportyvnogo profilyu [Greco-Roman wrestling: A training program for children's and youth sports schools, specialized children's and youth sports schools of the Olympic reserve, schools of higher sporting skills and specialized

щие закономерности ведения соревновательного поединка и универсальные требования к технико-тактической подготовленности борцов высокой квалификации. Физическое воспитание студентов. 2016. № 1. С. 37-42. https://dx.doi.org/10.15561/20755279.2016.0105

8. Латишев С.В. Науково-методичні основи індивідуалізації підготовки борців: автореф. дис. на здобуття наук. ступеня докт. наук з фіз. виховання і спорту: спец. 24.00.01 – «Олімпійський і професійний спорт». Київ, 2014. 39 с.
9. Лукіна О., Вороний В. Особливості змагальної діяльності борців греко-римського стилю. Спортивний вісник Придніпров'я. 2019. № 2. С. 21-29. http://infiz.dp.ua/misc-documents/2019-02/2019-02-03.pdf
10. Лукіна О.В., Вороний В.О. Фізичний розвиток і фізична підготовленість борців греко-римського стилю на етапі спеціалізованої базової підготовки. Спортивний вісник Придніпров'я: науково-практичний журнал ПДАФКіС. Дніпро, 2019. № 4. С. 64-73. https://DOI: 10.32540/2071-1476-2019-4-064
11. Лукіна О.В., Стрельчук С.Г., Gandziarski K., Puszczalowska-Lizis E. Аналіз змагальної діяльності тхеквондистів-кадетів до та після змін правил (версія ВТФ). Спортивний вісник Придніпров'я: науково-практичний журнал ПДАФКіС. Дніпро, 2019. № 3. С. 19-29. https://DOI: 10.32540/2071-1476-2019-3-019
12. Радченко Ю.А. Контроль технічної підготовленості борців греко-римського стилю з урахуванням психофізіологічних особливостей: автореф. дис. на здобуття наук. ступ. канд. наук з фізич. вих. та спорту: спец. 24.00.01 «Олімпійський і професійний спорт». Київ. 2011. 22 с.
13. Савченко В., Лукіна О., Коваленко Н., Микитчик О. Analysis of competitive activity of young male athletes in taekwondo WTF. Спортивний вісник Придніпров'я. 2017. № 2. С. 132-134. http://infiz.dp.ua/misc-documents/2017-02/2017-02-25.pdf
14. Тропін Ю.М. Вдосконалення спеціальної фізичної та техніко-тактичної підготовки кваліфікованих спортсменів у греко-римській боротьбі з урахуванням різних стилів протиборства: автореф. дис. на здобуття наук. ступ. канд. наук з фізич. вих. та спорту: спец. 24.00.01 «Олімпійський і професійний спорт». Харків, 2016. 22 с.
15. Шацьких В.В. Інформативні критерії психофізіологічних станів борців в умовах тренувальної діяльності. Педагогіка, психологія та медико-біологічні проблеми фізичного виховання і спорту. 2012. № 3. С. 137-142.
16. Mirzaei B., Akbar N. (2008). Skill Profile of Elite Iranian Greco-Roman Wrestlers. World Journal of Sport Sciences, 1, 8-11.

educational institutions of sports profile]. K. 60 p. (in Ukrainian)

5. Ermakov S.S., Tropin Y.N., Ponomaryev V.A. (2015) [Ways to improve the technical and tactical skills of Greco-Roman style wrestlers of various manners of conducting a duel]. Slobozhanskyi Herald of Science and Sport. № 5. P. 46-51. (in Russian)
6. Kalmykov S.V. (1994) Osnovy individualizazii podgotovki sportsmenov edinoborzev. [The basics of individualization of training athletes of martial arts]. Ulan-ude.: Buryat. book publishing house. 142 p. (in Russian)
7. Korobeynikov G.V., Latushev S.V., Latushev N.V., Goraschenko A. Y., Korobeynikova L. G. (2016) Obschie zakonomernosti vedeniya sorevnovatelnogo poedinka i universalnye trebovaniya k technikotakticheskoy podgotovlennosti borzov visokoy kvalifikazii [General patterns of competitive fights and universal requirements for technical and tactical training of highly qualified fighters]. Physical education of students. № 1. P. 37-42. (in Russian) https://dx.doi.org/10.15561/20755279.2016.0105
8. Latushev S.V. (2014) Naykovo-metoduchni osnovy induvidyalizatciy pidgotovky borziv [Scientific and methodological bases of individualization of training of wrestlers]: author. dis. … doc. scientist of physical education and sport: (special.) 24.00.01. "Olympic and professional sport". Kiev. 39 p. (in Ukrainian)
9. Lukina O.V., Voronyi V.O. (2019) Osoblivosti zmagalnoyi diyalnosti borziv greko-rimskogo stulyu [Features of the competitive activity of wrestlers of the Greco-Roman style]. Sports Herald of the Dnieper. № 2. S. 21-29. (in Ukrainian) http://infiz.dp.ua/misc-documents/2019-02/2019-02-03.pdf
10. Lukina O.V., Voronyi V.O. (2019) Fizichnyi rozvitok s fizichna pidgotovlenist borziv greko-rymskogo stilyu na etapi spezializovanoyi bazovoyi pidgotovki [Physical development and physical fitness of Greco-Roman wrestlers at the stage of specialized basic training]. Sports Herald of the Dnieper. № 4. S. 64-73. (in Ukrainian) https://DOI: 10.32540/2071-1476-2019-4-064
11. Lukina O.V., Strelchyk S.G., Gandziarski K., Puszczalowska-Lizis E. (2019) Analiz zmagalnoy diyalnosti tchekwondistov-kadetov do ta pislya zmin pravil (versiya WTF) [Analysis of the competitive activities of the Taekwondo Cadets before and after the rule changes (WTF version)]. Sports Herald of the Dnieper. № 3. S. 19-29. (in Ukrainian) https://DOI: 10.32540/2071-1476-2019-3-019
12. Radchenko Y.A. (2011) Kontrol tehnichnoyi pidgotovlennosti borziv greco-rymskogo stilyu z yrahuvannyam psihophiziologichnyh osoblyvostey

17. Ozkan Light, Khalil Ibrahim Cicioglu, Mehmet Gul, Berkan Alpay. Development of the wrestling competition analysis form according to the latest competition rules. International Journal of Wrestling Science. 2017; 7 (1-2): 41-45. https://doi.org/10.1080/21615667.2017.1422815
18. Pallares JG, Lopez JM, Muriel GX, Mikel Izquierdo AD. Physical Fitness Factors to Predict Male Olympic Wrestling Performance. Eur J Appl Physiol. 2011; 111: 1747–1758.
19. Tunnemann H. Evolution and adjustments for the new rules in wrestling. International Journal of Wrestling Science. 2013; 3 (2): 94-104.

[Control of technical preparedness of wrestlers of the Greco-Roman style taking into account psycho-physiological features]: author. dis. … cand. scientist of physical education and sport: (special.) 24.00.01. "Olympic and professional sport". Kiev. 22 p. (in Ukrainian)
13. Savchenko V., Lukina O., Kovalenko N., Mikitchik O. (2017) Analysis of competitive activity of young male athletes in taekwondo WTF. Sports Herald of the Dnieper. № 2. P. 132-134. (in English) http://infiz.dp.ua/misc-documents/2017-02/2017-02-25.pdf
14. Tropin J.M. (2016) Vdoskonalennya spezialnoy fizichnoy ta techniko-taktichnoy pidgotovky kvalifikovanyh sportsmeniv y greko-rimskiy borotbi z yrahyvannyam riznih styliv protuborstva [Improvement of special physical and techno-tactical training of qualified athletes in Greco-Roman wrestling taking into account various styles of confrontation]: author. dis. … cand. scientist of physical education and sport: (special.) 24.00.01. "Olympic and professional sport. Kharkiv. 22 p. (in Ukrainian)
15. Shazkich V.V. (2012) Informativni kriteriyi psihofiziologichnych staniv borziv v ymovah trenyvalnoyi diyalnosti. [Informative criteria of psycho-physiological states of fighters in the conditions of training activity]. Pedagogy, psychology and medical and biological problems of physical education and sports. № 3. P. 137-142. (in Ukrainian)
16. Mirzaei B., Akbar N. (2008). Skill Profile of Elite Iranian Greco-Roman Wrestlers. World Journal of Sport Sciences, 1, 8-11.
17. Ozkan Light, Khalil Ibrahim Cicioglu, Mehmet Gul, Berkan Alpay. (2017) Development of the wrestling competition analysis form according to the latest competition rules. International Journal of Wrestling Science. 7 (1-2): 41-45. https://doi.org/10.1080/21615667.2017.1422815
18. Pallares JG, Lopez JM, Muriel GX, Mikel Izquierdo AD. (2011) Physical Fitness Factors to Predict Male Olympic Wrestling Performance. Eur J Appl Physiol. 111: 1747-1758.
19. Tunnemann H. (2013) Evolution and adjustments for the new rules in wrestling. International Journal of Wrestling Science. 3 (2): 94-104.

Вороний Владислав Олегович
alpha5@i.ua
Придніпровська державна академія фізичної культури і спорту,
вул. Набережна Перемоги, 10, м. Дніпро, 41000, Україна.
Лукіна Олена Володимирівна
https://orcid.org/0000-0002-3085-7975; alpha5@i.ua
Придніпровська державна академія фізичної культури і спорту,
вул. Набережна Перемоги, 10, м. Дніпро, 41000, Україна.
Kovalenko Nina Leonidivna
forlang-infiz@ukr.net
Prydniprovsk State Academy of Physical Culture and Sport

Naberezhna Peremohy str., 10, Dnipro, 41000, Ukraine.
Кусовська Ольга Станіславівна
leka_1981@ukr.net;
Придніпровська державна академія фізичної культури і спорту,
вул. Набережна Перемоги, 10, м. Дніпро, 41000, Україна.
Чикольба Геннадій Миколайовия
https://orcid.org/0000-0002-4347-9547
Університет митної справи та фінансів; вул. Вернадського, 2/4, м. Дніпро, 410000, Україна.
Унгуріан Богдан
Університет ім. Олександра Іоана Куза, Ясі, Румунія