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Article



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DYNAMICS OF PHYSICAL FITNESS AND TECHNICAL-TACTICAL MOVEMENTS OF FREESTYLE WRESTLERS DURING PEDAGOGICAL EXPERIENCE

Abstract: The initial data levels of freestyle wrestlers of the experimental and control groups were almost the same. A comparative analysis of the obtained results revealed that certain differences were obtained in some technical and tactical actions, but these differences were of an unreliable nature and showed that they were related to individual characteristics. In general, the results of pedagogical testing confirmed that both groups of wrestlers participating in the experiment were of the same quality.

Key words: Experience, control, free fight, result, technical and tactical actions, pedagogical test.

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Introduction

During the experiment, physical fitness levels of the wrestlers in both the experimental group (n=12) and the control group (n=12) were compared using consistent tests conducted every 3 months, allowing for dynamic tracking over time. The experiment was carried out over three phases within an annual training cycle. To confirm the similarity in skill levels and achievements in sports between the experimental and control groups, test results were statistically analyzed through paired comparisons. The initial test results of the physical fitness levels for the experimental and

control group wrestlers at the start of the experiment are presented in Table 1.

The initial data levels for both groups of wrestlers were nearly identical. Comparative analysis of the results revealed some differences in certain technical-tactical movements, although these differences were statistically insignificant and likely due to individual characteristics. Overall, the results of the pedagogical tests confirmed that both groups of wrestlers participating in the experiment were of a qualitatively similar type.

Table-1. Wrestlers' initial test results

№	Tests	Control Group M±m (n = 12)	Experimental Group M±m (n = 12)	t	p
1	Comprehensive exercises in the "wrestler's bridge" position (s)	18.0 ± 0.50	17.9 ± 0.42	0.45	-
2	Half-turn and over-the-back throw, 5 times (s)	8.21 ± 0.22	8.23 ± 0.20	0.10	-

№	Tests	Control Group M±m (n = 12)	Experimental Group M±m (n = 12)	t	p
3	Climbing a rope (s)	5.03 ± 0.06	5.04 ± 0.06	0.25	-
4	2000m run (min, sec)	6:59 ± 15.01	6:58 ± 16.1	0.30	-
5	Throws at varying speeds over 5 minutes (times)	53.2 ± 1.27	53.4 ± 1.31	0.88	-
6	Pull-ups (times)	16.7 ± 0.76	17.0 ± 0.80	0.27	-
7	Dynamometry of thigh extensors (kg)	157.2 ± 1.37	158.1 ± 1.42	0.81	-
8	Hand grip strength dynamometry (kg)	59.1 ± 1.02	58.9 ± 1.04	0.35	-
9	Breath-hold duration (s)	48.3 ± 1.08	48.5 ± 1.10	0.26	-

During the analysis of the test results for both groups of athletes in the second phase of the

experiment, significantly meaningful results were obtained, as presented in Table 2.

Table-2. Physical Fitness Test Results of Wrestlers in the Second Phase of the Experiment

Tests	Groups	Significance of Difference
	Control Group M±m (n = 12)	Experimental Group M±m (n = 12)
Comprehensive exercises in the "wrestler's bridge" position (s)	17.8 ± 0.48	16.3 ± 0.41
Half-turn and over-the-back throw, 5 times (s)	8.17 ± 0.19	7.55 ± 0.17
Throws at varying speeds over 5 minutes (times)	53.8 ± 1.31	58.8 ± 1.30
2000m run (min, sec)	6:49 ± 12.01	6:46 ± 11.5
Pull-ups in 10 seconds (times)	7.8 ± 0.20	8.3 ± 0.21
Pull-ups (times)	17.0 ± 0.79	18.7 ± 0.82
Dynamometry of thigh extensors (kg)	157.7 ± 1.40	160.9 ± 1.44
Climbing a rope (s)	5.02 ± 0.04	4.95 ± 0.04

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It is evident that differences were identified in certain indicators of the wrestlers' physical fitness levels. In particular, the growth in indicators for tests that measure special endurance and special speed-strength qualities showed statistically significant differences ($p \leq 0.05$). For example, in the "Throws at varying speeds over 5 minutes" test, the result for the experimental group was 58.8 ± 1.30 times, which is significantly higher than the control group's result (53.8 ± 1.31 times). Similar differences were observed in the "Half-turn and over-the-back throw, 5 times" test (experimental group – 7.55 ± 0.17 s, control group – 8.17 ± 0.19 s) and in the "Comprehensive exercises in the 'wrestler's bridge' position" test (experimental group – 16.3 ± 0.41 s, control group – 17.8 ± 0.48 s). These differences also had a significant level of importance ($p \leq 0.05$).

Such differences in tests characterizing the wrestlers' special physical fitness indicate that the physical qualities of the wrestlers in the experimental group improved more rapidly due to the program we developed.

The dynamics of improvement were also observed in the "Climbing a rope" test, with the experimental group improving by 0.07 seconds. In

the "Pull-ups in 10 seconds" test, there was an increase of 0.5 repetitions, in the "Pull-ups" test – 2.7 repetitions, and in the "Dynamometry of thigh extensors" test – 3.2 kg. However, the growth in the experimental group for these tests was not statistically significant, meaning they did not show statistical importance.

The obtained results indicate a considerably rapid improvement in physical fitness indicators among the experimental group wrestlers during the second phase of the experiment. This growth is significant not only in terms of technical-tactical movement indicators but also in the overall physical fitness test results.

In the third phase of the experiment, the most significant values were obtained when comparing the results of the control group and the experimental group, as shown in Table 3. Analysis of the data in the table shows a significant improvement in test results for both groups of athletes throughout the experiment. However, it was found that the results of the experimental group participants were considerably higher and statistically significant compared to those of the control group.

Table-3. Physical Fitness Test Results of Wrestlers in the Third Phase of the Experiment (n = 24)

Tests	Groups	Significance of Difference
	Control Group $M \pm m$ (n = 24)	Experimental Group $M \pm m$ (n = 24)
Comprehensive exercises in the "wrestler's bridge" position (s)	17.6 ± 0.44	15.8 ± 0.38
Half-turn and over-the-back throw, 5 times (s)	8.14 ± 0.20	7.35 ± 0.15
Climbing a rope (s)	5.02 ± 0.04	4.92 ± 0.03
Pull-ups in 10 seconds (times)	7.7 ± 0.19	6.20 ± 0.11
Throws at varying speeds over 5 minutes (times)	54.2 ± 1.28	56.2 ± 1.28
2000m run	$6:35 \pm 11.5$	$6:20 \pm 0.11$
Pull-ups (times)	17.4 ± 0.80	20.0 ± 0.85
Dynamometry of thigh extensors (kg)	159.0 ± 1.43	163.2 ± 1.50

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For example, in the experimental group, significant improvements were found compared to the control group in the following tests: “Half-turn and over-the-back throw, 5 times” ($p \leq 0.05$), “Throws at varying speeds over 5 minutes” ($p \leq 0.05$), “Comprehensive exercises in the ‘wrestler’s bridge’ position” ($p \leq 0.05$), “Climbing a rope” ($p \leq 0.05$), “Pull-ups in 10 seconds” ($p \leq 0.05$), and “Dynamometry of thigh extensors” ($p \leq 0.05$).

This data indicates a considerable increase in the majority of physical fitness indicators for wrestlers in the experimental group during the third phase of the experiment. It is worth mentioning that these results confirm the principle of interconnection between different types of sports preparation, showing that intensive training methods that harmoniously develop physical qualities like speed-strength, endurance, power, and agility lead to significant improvement. This includes growth in both general physical fitness and specialized physical fitness indicators.

These improvements were significantly manifested across eight physical quality indicators, reflecting various aspects of physical fitness. This

result supports the effectiveness of the experimental training program for freestyle wrestlers, allowing us to conclude that the program is suitable for enhancing the physical preparedness of wrestlers.

CONCLUSION

In freestyle wrestling training, techniques commonly practiced include half-nelson throws, chest-to-chest throws, and bending throws to improve skills in effective throwing and in maintaining a grip. It should be noted that in planning training loads, the nature of the competition is taken into account, leading to the classification of wrestlers into groups based on fighting styles: attacking wrestlers, defensive wrestlers, and combination. Accordingly, we have adjusted the training loads for wrestlers.

The main conditions for enhancing “royal” techniques involve the continuous expansion of the technical-tactical movements performed and the constant search for the most effective tactical preparations that contribute to successfully executing “royal” techniques.

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