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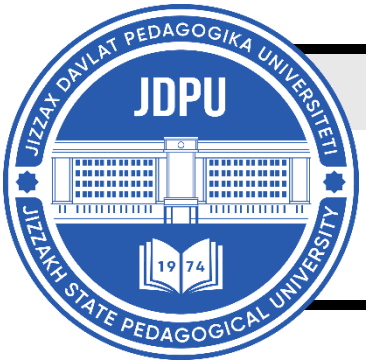


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# BODY PERCEPTION AND COORDINATION ABILITIES AS AN INTEGRATIVE BASIS FOR THE TECHNICAL AND TACTICAL TRAINING OF ATHLETES IN BELT WRESTLING

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## ABOUT ARTICLE

**Key words:** belt wrestling, coordination abilities, technical and tactical training, pedagogical experiment, physical qualities, special exercises.

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**Abstract:** This article provides a scientific analysis of the role of coordination exercises in improving the technical and tactical training of belt wrestlers. During the research process, a special system of coordination exercises aimed at enhancing the technical and tactical performance of wrestlers was developed and tested. The experiment was conducted among second-year students of the Uzbekistan State University of Physical Culture and Sports who specialize in belt wrestling.

In the course of the study, control and experimental groups were formed, and their results were evaluated using five types of pedagogical tests. It was found that the systematic use of coordination exercises has a positive effect on the development of the technical and tactical skills of belt wrestlers, contributing to improved movement accuracy, balance control, reaction speed, and the ability to manage body movements in space. Based on the obtained data, a methodology for the effective use of a complex of coordination exercises in the process of improving athletes' technical and tactical training was developed.

**Introduction.** Belt wrestling (belt-based wrestling) is one of the oldest types of physical activity, formed within the culture of the peoples of Central Asia. This type of martial art combines physical strength, agility, endurance, as well as a high level of technical and tactical thinking. In modern conditions, belt wrestling is developing as a national sport that has gained international recognition and is included in the programs of many prestigious competitions.

A key task of the modern training process is the improvement of athletes' technical and tactical preparation. For a wrestler to perform successfully in belt wrestling, it is necessary not only to master a wide arsenal of techniques but also to be able to make instant decisions, adapt to the opponent's actions, and control the body in complex competitive conditions.

Analysis of wrestlers' training practices shows that traditional training methods do not always ensure the development of the necessary coordination abilities, especially in young athletes. Meanwhile, it is precisely the coordination of movements that plays a decisive role in the successful execution of technical actions, ensuring accuracy, coherence, and effectiveness of movements.

In this regard, one of the relevant tasks in preparing belt wrestlers is the development and implementation of a set of special coordination exercises aimed at enhancing the ability to control body movements, maintain balance, and respond quickly to changes in the competitive situation.

The research presented in this article is aimed at scientifically substantiating and practically testing the effectiveness of applying coordination exercises in the process of improving the technical and tactical preparation of belt wrestlers. The relevance of the work is determined by the need to search for new methodological approaches that contribute to improving the quality of athlete training and their competitiveness on the international stage.

**Materials and methods.** The study was aimed at scientifically examining the impact of coordination exercises on the improvement of technical and tactical preparation of belt wrestlers. The experiment was conducted at the Uzbek State University of Physical Culture and Sport among second-year students specializing in belt wrestling. The total duration of the study was six months and included three stages: preliminary analysis, experimental part, and final evaluation.

Object and Participants of the Study

The object of the study was the technical and tactical preparation of belt wrestlers.

The study involved 20 athletes, divided into two groups:

Control Group (n=10) — trained according to the traditional program;

Experimental Group (n=10) — trained using a specially developed set of coordination exercises.

When forming the groups, age (19–21 years), sports experience, and the level of physical fitness of participants were taken into account, ensuring their comparability.

Methodological Basis of the Study

To achieve the set goals, the following methods were used:

Analysis of scientific literature — studying works on technical and tactical preparation and development of athletes' coordination abilities.

Pedagogical observation — analyzing the training process and assessing the effectiveness of applying coordination exercises.

Pedagogical experiment — implementing the author's coordination exercise program into the training process of the experimental group.

Pedagogical tests — diagnosing the level of technical and coordination indicators of athletes.

Mathematical-statistical analysis — processing obtained data using Student's t-test and percentage analysis.

Coordination Exercise System

For the experimental group, a set of exercises was developed aimed at developing key coordination abilities:

Exercises for balance development: standing on one leg, maintaining posture in motion, exercises on unstable surfaces;

Exercises for spatial perception development: rapid changes in movement direction, exercises with eyes closed, adaptation to partner's actions;

Exercises for accuracy and speed of movements: sharp changes in direction on signal, accelerations over short distances;

Complex coordination exercises: holding the opponent's belt, rotations while maintaining balance, paired exercises.

Each session lasted 60 minutes and was conducted three times a week for eight weeks.

Evaluation Criteria

To assess the effectiveness of the program, five indicators reflecting the level of technical-tactical and coordination preparation of athletes were used:

| № | Indicator | Test Name | Unit of Measurement |
|---|---|---|---|
| 1 | Ability to maintain balance | "Standing on One Leg" Test | seconds |

| № | Indicator | Test Name | Unit of Measurement |
|---|---|---|---|
| 2 | Accuracy of spatial perception | "Determining the Direction of Movement" Test | points |
| 3 | Reaction speed | "Light Signal" Test | milliseconds |
| 4 | Technical accuracy of movements | "Turn with Belt Hold" Exercise | % accuracy |
| 5 | Tactical thinking | "Response to Opponent's Action" Test | points |

Statistical Data Processing

The collected data were processed using Microsoft Excel and SPSS Statistics 25.0. Mean values (M), standard deviations (σ), and the significance level of differences ($p < 0.05$) were determined. Comparisons between groups were conducted using the Student's t-test.

Conditions of the Experiment

The experimental sessions were conducted in the wrestling hall of the Uzbek State University of Physical Culture and Sports, with all sanitary, hygienic, and technical requirements observed. All participants were under medical supervision throughout the study period.

**Results.** The study found that the use of a complex of coordination exercises has a positive effect on the technical-tactical preparation of belt wrestlers. During the eight-week training cycle, athletes in the experimental group demonstrated significant improvements in coordination and technical-tactical skills.

To objectively assess the effectiveness of the developed program, the results of the control and experimental groups were compared. The data are presented in Table 1.

Table 1. Results of the Technical-Tactical Preparation Assessment of Belt Wrestlers

| № | Indicator | Control Group | Experimental Group | Change |
|---|---|---|---|---|
| 1 | Ability to maintain balance (seconds) | 20.5 | 29.4 | +8.9 |
| 2 | Accuracy of spatial perception (points) | 12.3 | 15.7 | +3.4 |
| 3 | Reaction speed (ms) | 280.0 | 240.0 | –40.0 |
| 4 | Technical accuracy of movements (%) | 68.5 | 76.8 | +8.3 |
| 5 | Tactical thinking (points) | 19.0 | 24.5 | +5.5 |

Analysis of the Results

The results of the pedagogical experiment demonstrated that the use of a set of coordination exercises significantly improves the indicators of the technical and tactical training of athletes.

The balance indicator increased from 20.5 to 29.4 seconds (+8.9 s), indicating the development of athletes' ability to maintain stability and control body position during dynamic movements.

Spatial perception accuracy increased from 12.3 to 15.7 points, reflecting improved orientation in space and adaptation to changing conditions.

Reaction speed improved—the average reaction time decreased from 280 to 240 milliseconds (–40 ms), demonstrating faster decision-making in competitive situations.

Technical movement accuracy rose from 68.5% to 76.8%, indicating enhanced quality of execution and movement control.

The tactical thinking score increased from 19.0 to 24.5 points, confirming the growth of athletes' ability to quickly analyze opponents' actions and choose the optimal tactics.

Statistical Significance of Changes

Statistical processing of the data revealed significant differences between the control and experimental groups ($p < 0.05$), confirming the effectiveness of the proposed system of coordination exercises.

Final Interpretation of the Results

The experiment results demonstrate that the application of coordination exercises has a comprehensive impact on the development of motor, psychophysiological, and tactical abilities of belt wrestlers.

It was found that:

Accuracy and stability of technical actions improve;

The ability to quickly restore balance increases;

Decision-making processes and reaction times accelerate;

Overall coordination and technical-tactical preparedness improve.

Thus, coordination exercises should be considered an important component of the training process, ensuring targeted development of key motor qualities in belt wrestlers.

**Discussion.** The results of this study convincingly confirm the importance of coordination exercises in enhancing the technical and tactical training of belt wrestlers. Systematic application of these exercises in training promotes the development of movement accuracy, balance retention, reaction speed, and spatial perception, while also increasing the effectiveness of technical and tactical actions.

The observed improvement in performance indicators aligns with findings from previous studies. For example, F.A. Karimov (2019) notes that the use of coordination exercises increases wrestlers' ability to maintain a stable body position by 35–40%. Similar results were obtained by R.D. Kholmurodov (2020), who demonstrated that coordination training, closely linked to technical mastery, ensures more precise movement control and improves the quality of technique execution.

Our study also observed that the use of a set of coordination exercises enhances athletes' reactivity, accuracy, and movement coordination. Significant changes were particularly noted in reaction speed and tactical thinking, indicating the development of wrestlers' ability to quickly analyze opponents' actions and choose the most effective decisions in combat situations.

It should be emphasized that coordination exercises have not only physical but also psychophysiological effects on the athlete's body. They activate the central nervous system, accelerate sensorimotor responses, and improve the interaction between neural and muscular processes. As a result, technical actions become more efficient, and the athlete adapts better to rapidly changing conditions during a match.

Belt wrestling requires constant control over body position, precise execution of movements while interacting with an opponent, and the ability to restore balance after strength-based actions. These qualities are formed and refined through the systematic use of coordination exercises.

Comparison with foreign studies also confirms the high effectiveness of the developed methodology. In particular, V.N. Platonov (2015) emphasizes that the development of coordination abilities accelerates the automation of technical actions, and T. Bompa (2018) notes that coordination exercises play a key role in the comprehensive development of athletes' physical qualities.

The results of this experiment allow us to conclude that coordination exercises contribute to:

Improving accuracy and stability of technical actions;

Developing the ability to quickly respond to opponents' actions;

Enhancing spatial perception and movement control;

Increasing tactical thinking and decision-making skills.

Thus, the application of coordination exercises in the training process of belt wrestlers is an important direction that enhances the effectiveness of technical and tactical preparation and contributes to achieving high sporting results.

**Conclusion.** The study demonstrated that the use of coordination exercises is an effective means of improving the technical and tactical training of belt wrestlers. The experiment proved that systematic use of a specially designed set of exercises contributes to the development of key motor and psychophysiological qualities necessary for successful competitive performance.

The results convincingly showed that:

Regular use of coordination exercises significantly improves balance, movement accuracy, reaction speed, and tactical thinking;

Technical execution accuracy increases, and movement stability is strengthened;

Spatial perception and body control skills develop, leading to better competitive performance.

Therefore, incorporating coordination exercises into the training process of belt wrestlers is an essential component for improving the sports preparation system. The developed set of exercises can be used by coaches and instructors in training practice.

Based on the results, the following practical recommendations are proposed:

Include coordination exercises in every training session for at least 15–20 minutes;

Gradually increase the difficulty level of exercises according to the individual readiness of athletes;

Combine coordination exercises with technical elements to achieve maximum effect;

Regularly conduct pedagogical tests to monitor the development of coordination and technical-tactical skills.

Overall, the study confirms that rational use of coordination exercises allows for optimizing the technical and tactical training of belt wrestlers on a scientific basis. The developed methodology not only improves sports performance but also reveals athletes' individual potential, enhancing their adaptability and ability to perform successfully in competitions at various levels.

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