

**TECHNICAL TRAINING IN THE NON-OLYMPIC TAEKWONDO (POOMSAE) DIRECTION DURING THE INITIAL PREPARATION PHASE**

*Alexander Koshcheyev*

*Pridneprovsk State Academy of Physical Culture and Sports*

**Анотації:**

**Relevance of the research topic.** The article presents the features of technical training of athletes at the initial training stage in taekwondo (poomsae). It is shown that this stage forms the basis of all aspects of athletes' preparedness, which will enable them to effectively compete in the next stages. The specifics of taekwondo (poomsae), if not the Olympic direction of this sport, is rapidly increasing the requirements for the technical training of athletes, which in turn dictates the requirements for quality physical and technical training. **The purpose of the study:** to develop a methodology for teaching the technique of shock in taekwondo (poomsae) at the stage of initial training. **Methods:** analysis and study of literary sources, data from the Internet; pedagogical observation; pedagogical testing; pedagogical experiment; methods of mathematical statistics. **Research results.** The analysis of literary sources and normative documents, showed in taekwondo (poomsae), is very popular in the world. The basics of technical training in taekwondo (poomsae) are mainly kicks, arms and movements that affect the result of competitive activity. At the initial training stage, training is carried out mainly by kicks. Tests in physical fitness showed that athletes have an average level of physical fitness for their age category. Indicators of the level of technical preparedness of athletes at the end of the school year showed that the level of technical preparedness of athletes 7-10 years old corresponds to the average. The developed methodology was aimed at studying simpler strokes, which are easier to learn and absorb by athletes of the first year of training.

**Conclusions.** After introducing the methodology developed by us for training the technique of kicking according to the results of control testing, we can state that all athletes have improved their personal performance.

**Ключові слова:**

*martial arts, equipment, young athletes, movement training.*

**Технічна підготовка у неолімпійському напрямку тхеквондо (пумсе) на етапі початкової підготовки**

**Актуальність теми дослідження.** У статті представлені особливості технічної підготовки спортсменів етапу початкової підготовки в тхеквондо (пумсе). Показано, що даний етап формує базу всіх сторін підготовленості спортсменів, яка дасть можливість на наступних етапах ефективно виступати на змаганнях. Специфіка тхеквондо (пумсе), що не олімпійського напрямки даного виду спорту, стрімко підвищує вимоги до технічної підготовки спортсменів, що в свою чергу диктує вимоги щодо якісної фізичній і технічній підготовці. **Мета дослідження:** розробити методику навчання техніці ударів в тхеквондо (пумсе) на етапі початкової підготовки. **Методи:** аналіз і вивчення літературних джерел, даних мережі «Інтернет»; педагогічне спостереження; педагогічне тестування; педагогічний експеримент; методи математичної статистики. **Результати дослідження.** Аналіз літературних джерел і нормативних документів, показав в тхеквондо (пумсе), має велику популярність в світі. Основу технічної підготовки в тхеквондо (пумсе) складають в основному удари ногами, руками і переміщення, які впливають на результат змагальної діяльності. На етапі початкової підготовки навчання здійснюється переважно ударами ногами. Тести з фізичної підготовки, показали, що спортсмени мають середній рівень фізичної підготовки для своєї вікової категорії. Показники рівня технічної підготовленості спортсменів в кінці навчального року показали, що рівень технічної підготовленості спортсменів 7-10 років відповідає середньому. Розроблена методика була спрямована на вивчення більш простих ударів, які легше вивчаються і засвоюються спортсменами першого року навчання.

**Висновки.** Після впровадження розробленої нами методики з навчання техніки виконання ударів ногами по результатам контрольного тестування можна констатувати, що всі спортсмени поліпшили свої особисті показники.

*единоборства, техніка, юні спортсмени, навчання рухам.*

**Техническая подготовка в неолымпийском направлении тхэквондо (пумсэ) на этапе начальной подготовки**

**Актуальность темы исследований.** В статье представлены особенности технической подготовки спортсменов этапа начальной подготовки в тхэквондо (пумсэ). Показано, что данный этап формирует базу всех сторон подготовленности спортсменов, которая даст возможность на следующих этапах эффективно выступать на соревнованиях. Специфика тхэквондо (пумсэ), как не олимпийского направления данного вида спорта, стремительно повышает требования к технической подготовке спортсменов, что в свою очередь диктует требования по качественной физической подготовке. **Цель исследования:** разработать методику обучения технике ударов в тхэквондо (пумсэ) на этапе начальной подготовки. **Методы:** анализ и изучение литературных источников, данных сети «Интернет»; педагогическое наблюдение; педагогическое тестирование; педагогический эксперимент; методы математической статистики. **Результаты исследований.** Анализ литературных источников и нормативных документов, показал в тхэквондо (пумсэ), имеет большую популярность в мире. Основы технической подготовки в тхэквондо (пумсэ) составляют в основном удары ногами, руками и перемещения, которые влияют на результат соревновательной деятельности. На этапе начальной подготовки обучение осуществляется преимущественно ударами ногами. Тесты по физической подготовке, показали, что спортсмены имеют средний уровень физической подготовки для своей возрастной категории. Показатели уровня технической подготовленности спортсменов в конце учебного года показали, что уровень технической подготовленности спортсменов 7-10 лет соответствует среднему. Разработанная методика была направлена на изучение более простых ударов, которые легче изучаются и усваиваются спортсменами первого года обучения.

**Выводы.** После внедрения разработанной нами методики по обучению технике выполнения ударов ногами по результатам контрольного тестирования можно констатировать, что все спортсмены улучшили свои личные показатели.

*единоборства, техника, юные спортсмены, обучение движениям.*

**Problem Solving.** Taekwondo (Poomsae) is a type of martial arts that combines various types of oriental martial arts. Taekwondo (Poomsae) involves hands and feet, but they prefer legs. As the legs are a large group of muscles, that can give a more powerful impact [1, 9, 13, 15].

Technical training of the athlete is aimed at the study and improvement of the techniques of movements inherent in this sport. In the process of general technical training, the athlete replenishes the fund of motor skills necessary for him in life and in sports practice. In the course of special technical training, he mastered the technique of the selected sport and deepens his sports specialization, bringing to perfection the necessary skills and skills [6, 8, 10, 14]. The work is carried out in accordance with the Joint Plan (0116U003008) in the field of physical culture and sports for 2016–2020.

Under sports equipment should be understood a set of techniques and actions that provide the most effective solution to motor problems, due to the specificity of a particular sport, its discipline, type of competition. Specialized positions and movements of athletes, characterized by a characteristic motor structure, but taken outside the competitive situation, are called techniques. Receiving or several techniques used to solve a specific tactical task is an action [2, 8, 12, 16].

Technical readiness is the degree of sportsman's development of the system of movements, which corresponds to the peculiarities of this sport and is aimed at achieving high sports results. Technical readiness cannot be considered in isolation, but should be presented as an integral part of a whole, in which technical solutions are closely interconnected with the physical, mental, tactical capabilities of the athlete, as well as the specific conditions of the external environment in which the sport is performed. It is natural that the more techniques and actions the athlete possesses, the more he is prepared for the solution of complex tactical problems arising in the process of competitive struggle, the more effectively he can resist the attacking actions of the opponent and at the same time put the latter in difficult positions [6, 7, 12, 14].

The main task of the technical preparation of the athlete is to teach him the basics of the technique of competitive activity or exercises that serve as training tools, as well as improving the selected forms of sports equipment for the subject of competition [6, 7, 10, 16].

In the course of technical training it is necessary to achieve from the athlete that his equipment meets the following requirements:

1. The effectiveness of the technique is due to its efficiency, stability, variability, economy, minimal tactical in formativeness for the opponent.

2. The effectiveness of the technique is determined by its compliance with the task and high end results, compliance with the level of physical, technical, mental preparedness.

3. The stability of the technique is related to its noise immunity, independence from the conditions, and the functional condition of the athlete.

Modern training and especially competitive activities are characterized by a large number of distractions. These include active opposition of opponents, progressive fatigue, unusual refereeing style, unusual competition venue, equipment, ill-advised behavior of fans, etc. The ability of an athlete to perform effective techniques and actions in difficult conditions is a major indicator of stability and largely determines the level of technical readiness as a whole.

4. The variability of technique is determined by the ability of the athlete to promptly correct movement, depending on the conditions of competition. Experience shows that the desire of athletes to retain temporal, dynamic and spatial characteristics of movement in any competitive environment does not lead to success.

5. The cost-effectiveness of technology is characterized by the rational use of energy when performing techniques and actions, the expedient use of time and space. Other things being equal, it is preferable that the variant of motor actions, which is accompanied by minimal energy costs, the least strain of the athlete's mental capacity. In sports games, martial arts, difficult coordination sports, an important indicator of efficiency is the ability of athletes to perform effective actions at their small amplitude and the minimum time required to perform.

6. Minimal tactical in formativeness of equipment for opponents is an important indicator of efficiency in sports games and martial arts. Only technique that can mask tactical designs and act unexpectedly may be perfect here, so a high level of technical readiness implies the presence of the athlete's ability to perform such movements, which, on the one hand, are quite effective for the purpose, and on the other, do not have a clear pronounced informative details unmasking the athlete's tactical plan [3, 5, 7, 11, 13].

Taekwondo (Poomsae) technique is subdivided into the following concepts: stands, moves, strikes, protective actions and acrobatic and difficult coordination actions. The combat rack can be defined as the optimal arrangement of the body units relative to each other, which contributes to the best solutions to

motor problems. In the Taekwondo technique, there are many stances, the basic ones: ap-sogi, ap-kubi-sogi, dwit-sogi, juchum-sogi, hackdari-sogi and others. Racks can be high and low, open and closed. For example, when performing different formal complexes (Taegyuk) and freestyle programs, different racks can be used, which are determined by the rules of the competition and the age qualification of the athletes. The beats in Taekwondo (Poomsae) are impulsive explosive ballistic movements and can be different – straight or curved – trajectories. Impacts can be applied by hands or feet. Hand punches include various types of punches, elbows, fingers and ribs (jirugi). Kicks: Up-Chagi, Dolyo-Chagi, Dwit-Chagi and more. All blows can head and torso, the choice of the strike zone depends on many factors such as the level of technical and physical training, age and individual characteristics of the athlete and others [9, 10, 11, 15].

Movements are made on different straight or curvilinear trajectories, their main purpose is to choose and maintain the desired distance to the enemy, which provides a rational solution to the combat task while meeting the requirements of different complexes and programs Poomsae. One of the requirements for displacement is fusion, rationality, the absence of large vibrations of the total center of gravity vertically and horizontally.

Defenses are actions that neutralize the blows of the opponent and are performed in accordance with the rules of competition [5, 8, 9, 12].

In the preparation of Taekwondo players, it is also customary to classify the distances in which pairs or teams perform. They are distinguished by three: far, middle, neighbor. The choice of distance options depends on the type of program and the qualifications of the athletes [11, 13, 14].

Items classified in this way (its components) give a fairly complete idea, description of this sport by its peculiar motive features. The classification can be even more detailed depending on the specific tasks. Classification adds a certain order, the system in the relevant sections of the work. Starting from the classification, it is easier to describe, for example, the technique of a particular athlete or their group, to analyze technical and other preparedness, to open up reserves and shortcomings of training, to plan, model, that is, to make the training process more complete and managed. This applies to all sections of preparation, planning, and in general all work in general. That is why the knowledge related to this sport is classified into sections (technical training, tactical training, physical training, etc.) and brought into the system, which is easy to study, training athletes. In the same way, each section, for example, Taekwondo technique (Poomsae), is first classified, and then there is a description of the elements of technology, their tactical applications and features. Thus, the principle of systematic and consistent implementation of knowledge, training, analysis in a given sport is realized. Taekwondo (Poomsae) is a system in which its individual components are naturally and in a certain way connected with each other. So related elements of technology – the final position of one movement is the beginning of another movement, the quality and features of the performance of one of the elements of technology largely determine the quality and features of other elements of technology, and this characterizes the features built athlete movement system [2, 5, 6, 8].

The level of technical, tactical and physical fitness are interrelated so that the lack of development of any of the physical qualities can limit the technical or tactical capabilities of the athlete, determining his technical and tactical characteristics. For example, lack of mobility in some joints does not allow the free and full impact of kicking in the upper level of the permitted targets, and this may make some of the expedient and effective actions unfeasible, limiting the tactical decisions and capabilities of the athlete [7, 10, 15, 16].

Movements are perfected by repeated repetition in normal, facilitated or complicated conditions, by means of imitation work (work with a partner), in training performances, in competitions. The study and refinement of the technique of stroke execution should begin with direct strokes, and then proceed to lateral and circular strokes, and then to associate individual strokes in various combinations according to the program of performance. Each kick in Taekwondo (Poomsae) is divided into several phases – the

starting position, the removal of the shock leg, the return of the shock leg and the positioning of the foot in a combat position [12, 15].

Protective actions in Taekwondo (Poomsae) are no less important than strikes. The ability to defend gives the Taekwondo sportsmen's the confidence and ease of action on the basis of which he can tactically properly build a conditional battle when running freestyle. Taekwondo (Poomsae) protection is divided into types such as arm protection, body movement (torso) and movement protection. The protection is divided into simple and combined. Technical actions of simple protection include waste, jumps, slopes, supports, blocks, reflections. Combined protection combines, as a rule, block and reflection protection with slopes and waste protection [13, 16].

So Taekwondo (Poomsae) is a martial art that combines racks, movement, kicks and kicks, defense. Technique of basic movements in Taekwondo (Poomsae) includes the ability to quickly and easily move around the competition to create comfortable starting positions for the athlete to perform various technical and tactical actions. In the future, it is necessary to develop a training technique for the development of basic elements of the technique of movement of Taekwondo players.

**Analysis of recent research and publications.** The theoretical and methodological basis of the study is the modern publications of leading scientists who deal with the training of athletes in taekwondo, as well as current trends and requirements of the World Taekwondo Federation [1, 6, 9, 12]. However, the problem of increasing the level of technical training of novice athletes has not been considered in modern scientific publications [2, 4, 8, 14]. This led to the choice of research topic.

**The purpose** of the research is to develop a technique for teaching the technique of beats in taekwondo (Poomsae) at the stage of initial preparation.

**Material and methods of research.** The complex of pedagogical research methods in combination with the methods of mathematical statistics was used to solve the formulated problems in the work. In general, the complex used contained the following methods:

1. Analysis and synthesis of data of scientific and methodological literature sources, data of the Internet. Literary data and data of the Internet, which are of scientific and practical interest in connection with the problems related to speed-power training in taekwondo (Poomsae), were studied and summarized. Using this method allowed to study the state of the problem, to formulate the purpose and objectives of the study, to determine the complex of research methods.

2. Pedagogical observations. It is a method of gathering information through open or hidden perception of phenomena in order to study their changes under certain conditions and record its results. In our studies, the method of pedagogical observation was used to determine the characteristic properties and features of the structure of physical actions in young Taekwondo.

3. Pedagogical experiment. It was conducted to test and study the effectiveness of the developed technique for improving the technical preparedness of Taekwondo. The difference in the results of the tests made it possible to reveal the effectiveness of the technique in the training of young athletes.

The study involved 20 athletes aged 7-10 years who practice and have youth sports discharges from the Taekwondo sports club "Olymp TKD", Dnipro. All athletes and their parents agreed to participate in our study.

The study was conducted in four stages.

In the first stage it was: studied scientific and methodological literature on physical training, features of training men, features of classification of athletes engaged in taekwondo (Poomsae); physical fitness during the training activities of Taekwondo players is analyzed; the content of the Sport School technical training program, its compliance with the modern requirements of Taekwondo (Poomsae) is analyzed. In the second stage, the level of performance of pedagogical tests on physical training was determined. In the third stage, a technique for improving the technical training of athletes in the training phase was developed and experimentally grounded. In the fourth stage, the experimental data obtained were mathematically processed and practical recommendations were developed.

Testing. In order to determine the level of physical fitness of the Taekwondo sportsman's, a scientifically sound system of control tests and standards was applied: pull-up on the crossbar, squat, flexing of the extension of the arms in the supine position, jogging 100 m, running 1000 m, shuttle running from the post, lifting the trunk from the post. , throwing a stuffed ball (1 kg).

In order to determine the level of technical readiness of athletes, a scientifically sound system of control tests and standards was applied: 1) Jumping side Kick; 2) Multiple kicks in a jump; 3) a kick in the jump around the axis (Gradient of spins in a spin kick); 4) Kyorugi style consecutive kicks; 5) Acrobatic kicking technique.

These tests were performed in accordance with the rules of the Taekwondo (Poomsae) competition and the evaluation of these elements (Poomsae Competition Rules and Interpretation (In force as of May 14, 2019)).

4. Statistical analysis. The data were processed using mathematical statistics methods on a personal computer using Statistica 13 software and MS Exel software (2019).

**Research results.** 20 Taekwondo sportsmen's were tested for 7–10 years to obtain physical fitness indicators. To assess the level of development of physical qualities, 9 tests were selected (Table 1)

*Table 1*

**Physical fitness level for children 7–10 years old at the beginning of the training year**

The control test	Statistics (n = 10)		
	X	Σ	V
Pulling on the crossbar	4,90	1,14	23,18
Squatting	49,00	6,24	12,74
Bending of extension of hands in emphasis lying down	34,00	6,24	18,37
Run 100 m (s)	19,10	0,43	2,26
Run 1000 m	5,72	0,36	6,28
Shuttle Run 3×10 m (s)	8	0,77	9,68
Lifting the torso from the supine position	24,6	2,73	11,09
Long jump from place	92,3	1,10	1,19
Throwing Ball (1 kg)	16,4	1,56	9,52

Analysis of the test results shows that the level of fitness of the Taekwondo 7–10 years corresponds to the average level.

The technique of improving technical training depends on the age, physical preparedness and conditions under which the Taekwondo technique will be formed, which will be the basis for the future athletic skill of athletes.

The tasks for this age at the stage of initial training of newcomers should be simple and effective: health promotion; various physical training; correction of defects of physical development; training of Taekwondo techniques and techniques of various auxiliary and special training exercises. Technical training tasks for children engaged in Taekwondo at the initial stage of preparation: study of various technical elements; health promotion; repetition of technical actions; consolidation of the studied blows; the use of punches in competitive performances.

To begin training on the study of racks, moving in racks, drawing not difficult single strokes, studying the protective actions of the athlete. Then combine attack and defense. With each workout, repeat the material studied, secure and sharpen certain taekwondo elements.

The study of kicks for beginners should be in the following order: ap-chugi, yop-chugi, dolyo-chugi, miro-chugi, khuryo-chugi, dwit-chugi, sevo-chugi, tulge-chugi, toro-chugi and others. When teaching and securing techniques, a variety of training methods and methods of re-performing exercises with dosing load according to the coordination complexity of technical actions should be used. Methods of controlling the quality of the performance of the technical elements and their practical use should also be used. Improving the beats and main elements of taekwondo is the main part of the training. As in the preparatory part there is a warm-up of all groups of muscles in order not to be injured during the maximum load. In the main part, we solve the tasks related to the formation of the technique of

execution of blows, namely, we study, repeat, and fix certain technical taekwondo. In the final part of the session, we perform a hitch to perform a gradual reduction in load and avoid stress on the heart.

20 athletes of 7–10 years were tested for technical readiness. To assess the level of technical readiness, 5 tests were selected: 1. Left-right and right-foot jump (two yop-chagi). The height and technical quality of the impact were assessed. 2. Number of kicks in one jump (two ap-chagi). 3. A kick in the jump from the rotation about its axis. The number of degrees in revolutions in which the athlete was kicking was estimated. 4. Performing successive versatile strokes (jogging track). The speed, height and technical quality of the kicks were evaluated. 5. Acrobatic elements with kicks.

Each athlete was given two attempts in each exercise; the best result was recorded in Table 2.

Table 2

**The level of technical readiness of children 7–10 years at the end of the year  
(according to the rules of the competition)**

The control test		Statistics (n = 10)		
		X	Σ	V
1. (Jumping side Kick)	left	0,2	2,16	11,57
	right	0,2	1,29	6,47
2. (Multiple kicks in a jump)		3	2,38	10,86
3. (Gradient of spins in a spin kick) (град.)	left	360	0,74	10,69
	right	540	0,95	12,32
4. (Kyorugi style consecutive kicks) up to 5 strokes		0,3	0,95	11,43
5. (Acrobatic kicking technique)		0,2	0,90	11,02

Analysis of the test results for determining the level of technical readiness showed that the best indicator "jumping in the jump (Jumping side Kick)" was 0.3 and the worst 0.1 points. Group average: 0.2 points. The analysis of the result of the test "Multiple kicks in a jump" showed the following results. The best indicator in this test for athletes 7–10 years was 4 strokes, and the worst indicator 2 strokes. Average in groups: 3 strokes. The results of the test showed that the best result "Gradient of spins in a spin kick (grad.)" Was 720 degrees, the worst was 360 degrees, so the average for groups: 540 degrees. In the "Kyorugi style consecutive kicks" test, the best score was 0.4 points and the worst 0.2 points, with an average of 0.3 points. In the Acrobatic kicking technique, the best indicator was 0.3 points and the worst 0.1 points, with an average of 0.2 points.

The analysis of the test results shows that the level of technical readiness of the Taekwondo 7–10 years corresponds to the average level.

**Discussion.** In the system of sports training, there are different approaches to improving technical preparedness in taekwondo. According to the authors, it can be implemented through separate components of technical skill of Taekwondo players. This technique has a comprehensive approach to improve the technical skills of young athletes engaged in taekwondo (Poomsae), which was planned in the annual cycle of the initial training phase. The data provided here indicates its effectiveness. Prospects for further research are the development of a technique for improving the base kicks in the next years of the initial preparation phase and their implementation in the process of competitive activity.

**Conclusions and prospects for further research:**

1. The analysis of literature and regulations showed that Taekwondo (Poomsae) is very popular in the world and the study of technology and its improvement is an integral part of training. Technical training in Taekwondo (Poomsae) is based on kicks, kicks and movements that affect the performance of competitive activities. During the initial preparation phase, the training is mainly done with kicks, namely: up-chagi, yop-chagi, dwit-chagi and others. Teaching these beats has a sequence that depends on their coordination complexity.

2. So, fitness tests have shown that athletes have an average level of physical fitness for their age category. Indicators of the level of technical readiness of athletes at the end of the academic year showed that the level of technical readiness of athletes of 7-10 years corresponds to the average.

3. The technique developed was aimed at studying simpler strokes that are easier to learn and assimilate for first-year athletes.

4. The efficiency of the developed methodology was proved experimentally. After the implementation of the technique developed by us for training the technique of performing exercises according to the results of control testing, it can be stated that all athletes have improved their personal performance. It can also be concluded that many athletes are more developed right foot, so the blows with the right foot have a uniform coefficient of variation, and the left foot – not homogeneous.

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### **DOI:**

### **Відомості про автора:**

Кошчєєв О. С.; [orcid.org/0000-0002-5232-7983](https://orcid.org/0000-0002-5232-7983); [alextkd@3g.ua](mailto:alextkd@3g.ua); Придніпровська державна академія фізичної культури і спорту, вул. Набережна Перемоги, 10, Дніпро, 49094, Україна.