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## **CLASSIFICATION OF SWIMMING SPORTS AND THEIR TEACHING METHODOLOGY**

Pulatova G. Q.

Chirchik State Pedagogical University

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### **Abstract**

Swimming is one of the most popular and effective forms of physical activity that combines elements of endurance, flexibility, and strength. It plays a crucial role in maintaining health, developing motor coordination, and enhancing psychological stability. The classification of swimming sports provides the foundation for organizing training processes according to the specific characteristics of each discipline. Swimming includes various types such as freestyle, breaststroke, backstroke, butterfly, and medley swimming, each requiring a different technical and physiological approach. The teaching methodology of swimming focuses on mastering these techniques systematically, ensuring safety in water, and developing the physical abilities necessary for professional or recreational performance. In sports education, a structured classification helps trainers design individualized training programs, considering the athlete's age, physical condition, and objectives. Methodological principles such as gradual load increase, biomechanical analysis, and correction of movement errors form the scientific base of modern swimming pedagogy. This research analyzes the main types of swimming sports, their biomechanical features, and didactic principles of teaching them within the framework of sports education. The article highlights the importance of differentiated instruction, psychomotor development, and technical skill acquisition for competitive success. Furthermore, it examines how the classification of swimming methods contributes to optimizing training outcomes, promoting health, and ensuring efficient pedagogical management.



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**Keywords.** Swimming sports, classification, teaching methodology, biomechanics, physical training, skill development, endurance, motor coordination, swimming techniques, sports pedagogy.

### **Аннотация**

Плавание является одним из самых популярных и эффективных видов физической активности, сочетающим в себе элементы выносливости, гибкости и силы. Оно играет важную роль в поддержании здоровья, развитии двигательной координации и укреплении психологической устойчивости. Классификация видов спортивного плавания служит основой для организации тренировочного процесса в соответствии со специфическими особенностями каждого направления. Плавание включает различные стили — кроль, брасс, на спине, баттерфляй и комплексное плавание, — каждый из которых требует особого технического и физиологического подхода. Методика обучения плаванию направлена на систематическое овладение этими техниками, обеспечение безопасности на воде и развитие физических качеств, необходимых для профессиональных или оздоровительных целей. В спортивном образовании структурированная классификация помогает тренерам разрабатывать индивидуализированные программы тренировок с учётом возраста, физического состояния и целей спортсмена. Методологические принципы, такие как постепенное увеличение нагрузки, биомеханический анализ и коррекция ошибок движений, формируют научную основу современной педагогики плавания. В статье анализируются основные виды спортивного плавания, их биомеханические особенности и дидактические принципы обучения в рамках спортивного образования. Подчёркивается значение дифференцированного подхода, психомоторного развития и формирования технических навыков для достижения соревновательного успеха. Кроме того, рассматривается, как классификация методов плавания способствует оптимизации тренировочного процесса, укреплению здоровья и эффективному педагогическому управлению.



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**Ключевые слова.** спортивное плавание, классификация, методика обучения, биомеханика, физическая подготовка, развитие навыков, выносливость, двигательная координация, техника плавания, спортивная педагогика.

### **Annotatsiya**

Suzish — bu bardoshlilik, moslashuvchanlik va kuch elementlarini oʻzida mujassam etgan eng mashhur va samarali jismoniy faoliyat turlaridan biridir. U sogʻliqni mustahkamlashda, harakat koordinatsiyasini rivojlantirishda va psixologik barqarorlikni oshirishda muhim rol oʻynaydi. Suzish sportining turlarini tasniflash har bir yoʻnalishning oʻziga xos xususiyatlariga muvofiq mashgʻulot jarayonini tashkil etish uchun asos boʻlib xizmat qiladi. Suzish turlari — erkin usul, brass, orqada suzish, delfin (butterfly) va kompleks suzish — har biri oʻziga xos texnik va fiziologik yondashuvni talab etadi. Suzishni oʻqitish metodikasi ushbu uslublarni tizimli oʻzlashtirishga, suvda xavfsizlikni taʼminlashga va professional hamda sogʻlomlashtiruvchi maqsadlar uchun zarur boʻlgan jismoniy qobiliyatlarni rivojlantirishga qaratilgan. Sport taʼlimida tuzilgan klassifikatsiya murabbiylarga sportchining yoshi, jismoniy holati va maqsadlarini inobatga olgan holda individual mashgʻulot dasturlarini ishlab chiqish imkonini beradi. Yuklamani bosqichma-bosqich oshirish, harakatlarning biomekanik tahlili va xatolarni tuzatish kabi metodik tamoyillar zamonaviy suzish pedagogikasining ilmiy asosini tashkil etadi. Mazkur maqolada suzish sportining asosiy turlari, ularning biomekanik xususiyatlari va sport taʼlimi doirasida ularni oʻqitishning didaktik tamoyillari tahlil qilinadi. Shuningdek, differensial yondashuv, psixomotor rivojlanish va texnik koʻnikmalarni shakllantirishning musobaqaviy muvaffaqiyat uchun ahamiyati yoritiladi. Bundan tashqari, suzish metodlarini tasniflash mashgʻulot samaradorligini oshirishga, sogʻlom turmush tarzini targʻib etishga va pedagogik boshqaruvni takomillashtirishga xizmat qilishi tahlil etiladi.

**Kalit soʻzlar.** suzish sporti, tasnif, oʻqitish metodikasi, biomekanika, jismoniy tayyorgarlik, koʻnikma rivojlantirish, bardoshlilik, harakat koordinatsiyasi, suzish texnikasi, sport pedagogikasi.



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## **Introduction**

Swimming, as both a competitive sport and a recreational activity, occupies a significant place in the system of physical education and sports sciences. It represents one of the few sports that engage almost all muscle groups of the human body, promoting endurance, strength, and flexibility simultaneously. The development of swimming as a sport has led to the emergence of various disciplines, each characterized by specific technical, physiological, and tactical requirements. The classification of swimming sports is essential not only for organizing competitions but also for structuring the teaching and learning process in educational and training institutions.

In sports universities, swimming training is conducted based on methodological principles that ensure the consistent formation of correct swimming techniques and the gradual development of physical qualities. A systematic approach to teaching swimming involves understanding the biomechanics of movement, the hydrodynamic properties of water, and the coordination mechanisms that underlie efficient swimming. By analyzing the classification of swimming types, educators and coaches can design more targeted programs that align with the learner's goals—be it general fitness, rehabilitation, or professional competition. Modern pedagogy emphasizes that effective teaching of swimming requires a balance between theoretical knowledge and practical application. Students must not only perform the movements correctly but also understand their purpose, mechanics, and the physiological effects they produce. Therefore, the classification of swimming sports—freestyle, backstroke, breaststroke, butterfly, and medley—serves as a pedagogical framework for developing comprehensive training programs. Each type of swimming has unique biomechanical principles that demand specific methodological approaches for instruction.

Additionally, swimming education contributes to psychological and emotional well-being, as water-based activities reduce stress and improve concentration. From an educational perspective, mastering swimming techniques develops discipline, persistence, and self-confidence. Consequently, swimming is not only a sport but also an educational tool that shapes physical culture and human development. Understanding its classification and methodology allows educators



to implement scientifically grounded, safe, and effective training systems in academic and professional sports environments.

## Methods

The methodological framework of teaching swimming sports is based on a combination of pedagogical principles, physiological conditioning, and biomechanical analysis. The teaching process is structured in stages, progressing from basic water adaptation to the mastery of complex competitive techniques. In the initial stage, the focus is on familiarizing students with the aquatic environment, developing confidence, and mastering fundamental movements such as floating, breathing control, and basic propulsion. These preparatory exercises form the basis for subsequent skill development and ensure that learners acquire proper body positioning and rhythm in water.

At the intermediate stage, instruction emphasizes the differentiation of swimming styles—freestyle, backstroke, breaststroke, and butterfly. Each stroke requires precise coordination between arm movements, leg actions, and breathing patterns. The methodological approach involves using demonstration, verbal explanation, and video analysis to help students visualize and understand the correct movement structure. Biomechanical feedback plays a key role in identifying and correcting technical errors, while repetitive practice ensures muscle memory and efficiency.

Main Idea / Focus	Key Points and Findings	Educational / Methodological Significance
General overview of the study	Defines swimming as a multidimensional physical activity requiring endurance, flexibility, and strength; emphasizes classification and teaching methodology as foundations for effective training	Establishes the scientific and pedagogical basis for structured swimming education
Role of swimming in physical education and sport	Highlights swimming's physiological, psychological, and educational benefits; presents main swimming types (freestyle, backstroke, breaststroke, butterfly, medley); underscores need for systematic, biomechanically informed instruction	Creates a theoretical framework for integrating science and pedagogy in swimming education
Methodological foundation of teaching swimming	Describes phased instruction (basic–intermediate–advanced); includes biomechanical analysis, video feedback, and individualized training; emphasizes safety, motivation, and adaptability	Demonstrates the importance of evidence-based, technology-supported teaching processes



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<b>Practical outcomes of applying the methodology</b>	Reports improved coordination, endurance, flexibility, and confidence; identifies cognitive and psychomotor gains; notes effectiveness of classification-based instruction and use of technology	Validates that structured and differentiated teaching enhances physical and mental development
<b>Interpretation of findings and implications</b>	Explains how classification supports gradual skill progression; emphasizes balance between group and individual instruction; discusses motivational and psychological aspects	Highlights the holistic nature of swimming instruction—integrating body, mind, and pedagogy
<b>Summary and educational impact</b>	Affirms classification as essential for effective, safe, and inclusive swimming education; calls for scientific and creative teaching approaches in sports universities	Provides a conceptual model for modern swimming pedagogy, blending science, art, and education
<b>Integrative value of the study</b>	Links biomechanical, physiological, and pedagogical perspectives into a unified teaching framework for swimming	Strengthens professional preparation of coaches and promotes lifelong physical culture through swimming

For advanced learners and professional athletes, training methods include interval training, resistance exercises, and hydrodynamic drills that enhance endurance and speed. The use of modern technology—such as underwater cameras, motion sensors, and digital analysis software—enables coaches to evaluate technique and performance more accurately. Moreover, individualized training programs are developed based on the swimmer’s physiological characteristics, anthropometric data, and performance objectives.

Pedagogically, the methodology integrates both individual and group training formats, ensuring that each student progresses according to their abilities. Safety rules and health monitoring are essential components, as swimming involves both physical and psychological adaptation. The methodological system also incorporates motivational strategies, goal setting, and feedback mechanisms that encourage continuous improvement. Ultimately, effective teaching of swimming requires the integration of scientific knowledge, technical expertise, and creative pedagogy, ensuring that each swimmer achieves optimal results while maintaining a positive and safe learning experience.



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## Results

The implementation of the classified and methodical approach to teaching swimming sports yielded significant improvements in both technical proficiency and physical conditioning among students. Through the structured stages of training, learners demonstrated enhanced coordination, better body alignment, and increased confidence in aquatic environments. The classification of swimming types allowed instructors to systematically assess progress and identify individual strengths and weaknesses. As a result, students developed a deeper understanding of the mechanical principles of different strokes and their physiological effects on the human body.

Freestyle and backstroke training contributed most effectively to cardiovascular endurance, while breaststroke and butterfly techniques improved overall muscular strength and flexibility. The integration of biomechanical analysis in the learning process helped to minimize unnecessary energy expenditure and optimize swimming efficiency. Students who received regular corrective feedback during practice sessions achieved greater technical precision and faster adaptation to complex movements. Furthermore, the use of visual aids and technological tools, such as underwater video recordings, increased the accuracy of performance evaluation and self-correction.

Another important result was the improvement of psychomotor and cognitive skills. Learners became more aware of their body movements, timing, and breathing control, which enhanced their overall swimming rhythm and consistency. Group-based training also strengthened social interaction, motivation, and cooperative learning, contributing to the development of teamwork and discipline. The systematic classification of methods made it possible to align training intensity with the individual's physical potential, preventing overtraining and reducing the risk of injury.

From a pedagogical perspective, the applied methodology promoted independent learning, as students were encouraged to analyze their performance and set realistic goals for improvement. This reflective approach contributed to long-term skill retention and the ability to transfer learned techniques to different swimming styles. Overall, the structured and scientifically grounded methodology not only improved the technical outcomes but also fostered a holistic educational



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environment where physical, psychological, and cognitive development were equally emphasized.

### **Discussion**

The classification of swimming sports and their teaching methodology provides a scientific and pedagogical foundation for improving the efficiency of swimming instruction. The results of the applied methodology indicate that systematic training based on the differentiation of swimming styles leads to more consistent progress and a deeper understanding of technique. Each swimming discipline presents unique biomechanical demands and requires specific methodological adjustments. For instance, the butterfly stroke demands higher energy expenditure and precise coordination, whereas the breaststroke emphasizes rhythm, timing, and controlled breathing. Recognizing these distinctions allows coaches and educators to develop teaching strategies tailored to the physiological and psychological capacities of learners.

One of the most valuable insights is that classification-based teaching fosters gradual skill development. By organizing swimming education according to difficulty and technical complexity, learners are guided from simple to advanced movements, which reduces fear, builds confidence, and ensures safety. Moreover, incorporating biomechanical and hydrodynamic analysis enhances the effectiveness of training, as it provides objective data for correcting errors and refining movements. The integration of technology—such as motion sensors and digital video feedback—further strengthens this approach by allowing real-time performance evaluation.

Another critical aspect is the pedagogical balance between group and individual instruction. While group training encourages social interaction and motivation, individual feedback remains essential for personal progress. This dual approach helps students maintain engagement and develop a sense of responsibility for their own learning outcomes. Furthermore, the psychological dimension of swimming instruction cannot be overlooked. Swimming, being an aquatic sport, often evokes anxiety or fear among beginners. Therefore, motivational methods, relaxation exercises, and positive reinforcement are necessary to ensure emotional comfort and persistence throughout the learning process.



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In the context of sports universities, methodological classification also plays a crucial role in preparing future coaches and physical education specialists. It enables them to design scientifically grounded programs that combine physiological training, safety education, and technical refinement. Ultimately, the integration of classification and teaching methodology promotes a comprehensive approach where swimming is not only a sport but also a pedagogical tool for developing endurance, discipline, coordination, and overall well-being.

### **Conclusion**

The study of the classification of swimming sports and their teaching methodology highlights the significance of a systematic, scientifically grounded approach to swimming education. Proper classification allows for the differentiation of training processes according to the technical, physiological, and psychological characteristics of each swimming discipline. Such an approach ensures the gradual and efficient development of motor skills, endurance, and coordination, forming the foundation for both amateur and professional success. The teaching methodology of swimming, when built upon this classification, provides educators and coaches with a structured framework for instruction. It enables the organization of lessons that balance theory and practice, safety and challenge, individual and group training. The integration of biomechanical principles, hydrodynamic understanding, and technological tools enhances the precision of movement and the efficiency of energy use. Moreover, pedagogical strategies that emphasize motivation, emotional support, and feedback contribute to sustained learner engagement and psychological comfort in the aquatic environment.

The classification-based system also contributes to a more inclusive and adaptable training process, accommodating learners of different abilities and goals. In sports education institutions, this model plays an essential role in preparing future coaches who can apply evidence-based methods to real-world training settings. By combining scientific analysis with creative pedagogy, swimming instruction becomes not only a means of improving physical



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performance but also a method of fostering personal growth, discipline, and resilience.

In conclusion, swimming as a sport and educational discipline stands as a model of how physical activity can integrate science, art, and pedagogy. A clear classification and a well-defined methodology allow the sport to evolve, ensuring that every learner—whether novice or elite—can achieve mastery, safety, and a lifelong appreciation of aquatic movement.

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