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METHODOLOGY OF FORMING COORDINATION SKILLS IN GYMNASTICS

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Abstract

This article examines the methodology of forming coordination skills in gymnastics within the context of pedagogical sports education. Coordination is one of the fundamental motor abilities that determines the quality, accuracy, rhythm, stability, and expressiveness of gymnastic movements. In gymnastics, coordination is not limited to the ability to perform separate exercises correctly; it also includes spatial orientation, balance control, rhythm regulation, muscular differentiation, reaction speed, movement combination, and the ability to maintain body control in changing motor situations. The article analyzes methodological approaches to developing coordination skills through preparatory exercises, balance tasks, acrobatic elements, apparatus-based movements, rhythmic exercises, and gradually complicated motor combinations. Special attention is paid to the importance of age, physical readiness, individual motor experience, and psychological confidence in the formation of coordination abilities. The study emphasizes that systematic, progressive, and pedagogically grounded training methods help students master complex gymnastic movements more effectively, reduce technical errors, prevent injuries, and develop stable motor habits. The article also highlights the role of the teacher or coach in organizing exercises according to the principles of consistency, accessibility, variability, individualization, and continuous feedback.

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Keywords: Gymnastics, coordination skills, motor abilities, physical education, sports pedagogy, movement control, balance, motor learning.

Introduction

GIMNASTIKA MASHG‘ULOTLARIDA KOORDINATSION QOBILIYATLARNI SHAKLLANTIRISH METODIKASI

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Annotatsiya
Ushbu maqolada sport pedagogik ta’limi sharoitida gimnastikada koordinatsion ko‘nikmalarni shakllantirish metodikasi yoritiladi. Koordinatsiya gimnastik harakatlarning sifati, aniqligi, ritmi, barqarorligi va ifodaviyligini belgilovchi asosiy harakat qobiliyatlaridan biri hisoblanadi. Gimnastikada koordinatsiya alohida mashqlarni to‘g‘ri bajarish bilangina cheklanmaydi, balki fazoda mo‘ljal olish, muvozanatni boshqarish, ritmni tartibga solish, mushak kuchlanishini farqlash, reaksiya tezligi, harakatlarni uyg‘unlashtirish hamda o‘zgaruvchan harakat vaziyatlarida tana nazoratini saqlashni ham o‘z ichiga oladi. Maqolada tayyorlov mashqlari, muvozanat topshiriqlari, akrobatik elementlar, gimnastika jihozlaridagi harakatlar, ritmik mashqlar va bosqichma-bosqich murakkablashtirilgan harakat kombinatsiyalari orqali koordinatsion ko‘nikmalarni rivojlantirishga doir metodik yondashuvlar tahlil qilinadi. Koordinatsion qobiliyatlarni shakllantirishda yosh xususiyatlari, jismoniy tayyorgarlik, individual harakat tajribasi va psixologik ishonchning ahamiyatiga alohida e’tibor qaratiladi. Tadqiqotda tizimli, izchil va pedagogik asoslangan mashg‘ulot usullari talabalarning murakkab gimnastik harakatlarni samarali o‘zlashtirishi, texnik xatolarni kamaytirishi, jarohatlanishning oldini olishi va

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barqaror harakat malakalarini shakllantirishiga xizmat qilishi ta'kidlanadi. Shuningdek, mashqlarni izchillik, tushunarlilik, variativlik, individuallashtirish va doimiy qayta aloqa tamoyillari asosida tashkil etishda o'qituvchi yoki murabbiyning roli ochib beriladi.

Kalit so'zlar: gimnastika, koordinatsion ko'nikmalar, harakat qobiliyatlari, jismoniy tarbiya, sport pedagogikasi, harakat nazorati, muvozanat, harakatni o'rganish.

Introduction

Gymnastics occupies a special place in the system of physical education and sports because it develops the human body through accuracy, rhythm, strength, flexibility, balance, spatial orientation, and disciplined movement control. Among these qualities, coordination skills are of particular importance, since they determine how effectively a learner can organize body movements in space and time, combine different motor actions, maintain stability, and adapt to changing exercise conditions. In gymnastics, even a technically simple movement requires the coordinated participation of muscles, joints, sensory systems, attention, and motor memory. Therefore, the methodology of forming coordination skills should be considered not as an additional component of training, but as one of the central directions of gymnastic education.

Coordination in gymnastics is a complex motor ability that includes balance, rhythm, reaction, differentiation of muscular effort, orientation in space, synchronization of body parts, and the ability to restructure movement according to the task. A student who performs a roll, jump, turn, balance position, vault element, or acrobatic combination must not only know the sequence of actions, but also feel the direction, speed, amplitude, tension, and timing of each movement. This makes gymnastics an effective pedagogical tool for developing general motor culture, discipline, self-control, courage, and confidence. At the same time, insufficient coordination may lead to technical errors, fear of complex exercises, unstable performance, and increased risk of injury.

In pedagogical universities, especially in sports-oriented programs, the formation of coordination skills in gymnastics has both practical and professional significance. Future physical education teachers and coaches should not only master gymnastic exercises themselves, but also understand how to teach these

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exercises methodically, safely, and progressively. They need to know how to select preparatory tasks, simplify complex elements, use visual demonstration, provide verbal explanation, organize assistance and safety support, identify individual difficulties, and evaluate the dynamics of motor development. In this regard, coordination training becomes an important basis for professional competence in physical education.

The relevance of this topic is also connected with the need to modernize sports education through scientifically grounded teaching methods. In many cases, coordination skills are expected to develop naturally through repeated practice. However, mechanical repetition without proper methodological structure does not always produce stable results. Effective coordination development requires gradual complication of tasks, variability of movement situations, combination of static and dynamic balance exercises, rhythm-based activities, use of apparatus, spatial orientation tasks, and regular feedback. Such an approach allows students to understand the movement more consciously and perform it with greater precision.

The methodology of forming coordination skills in gymnastics should be based on the principles of consistency, accessibility, individualization, safety, variability, and pedagogical control. Exercises must move from simple to complex, from familiar to unfamiliar, from slow performance to faster execution, and from isolated movements to integrated combinations. This creates conditions for the formation of stable motor habits and for the development of movement intelligence. Thus, the study of coordination training in gymnastics is important for improving the quality of sports education, enhancing students' motor preparedness, and preparing future specialists capable of organizing effective and safe gymnastic instruction.

Methods.

The study used a methodological and pedagogical analysis aimed at identifying effective ways of forming coordination skills in gymnastics among students of a pedagogical university specializing in sports. The research was based on the understanding that coordination is not a single isolated ability, but a complex system of motor qualities connected with balance, rhythm, spatial orientation, muscular differentiation, reaction speed, movement accuracy, and the ability to combine several actions into one complete motor structure. Therefore, the methodological approach focused on the gradual development of these

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components through specially selected gymnastic exercises and pedagogical techniques.

At the first stage, scientific and methodological literature on physical education, gymnastics theory, sports training, motor learning, and coordination development was studied. This made it possible to clarify the theoretical foundations of coordination training and determine the main pedagogical principles that should guide the organization of gymnastic lessons. Special attention was given to the principles of gradualness, accessibility, repetition, variability, individualization, safety, and feedback. These principles were considered essential because gymnastics includes movements that require precise body control, psychological readiness, and correct technical execution.

The second stage involved the analysis of gymnastic exercises according to their coordination complexity. Exercises were conditionally grouped into preparatory movements, balance tasks, acrobatic elements, rhythmic exercises, apparatus-based exercises, and combined movement sequences. Preparatory exercises included simple movements for improving joint mobility, posture control, body alignment, and muscular coordination. Balance tasks were used to develop static and dynamic stability in different body positions. Acrobatic elements, such as rolls, cartwheels, handstands, and supported movements, were considered as tools for developing spatial orientation and confidence. Rhythmic exercises helped students coordinate movements with tempo, direction, and sequence. Apparatus-based exercises created conditions for developing precision, courage, and adaptation to changing support conditions.

Observation was used as an important method for evaluating how students performed coordination tasks during gymnastic lessons. The teacher's attention was directed toward movement accuracy, body alignment, ability to maintain balance, smoothness of transitions, reaction to instructions, rhythm of execution, and the number of technical errors. Observation also helped identify individual difficulties, such as fear during inverted positions, insufficient spatial awareness, weak balance control, or inability to combine movements fluently. These indicators were important for selecting appropriate corrective exercises and determining the level of methodological support needed by each student.

Comparative pedagogical analysis was also applied. Traditional repetition-based teaching was compared with a more structured methodology that included preparatory drills, step-by-step complication, visual demonstration, verbal

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explanation, partner assistance, corrective feedback, and reflective self-assessment. This comparison made it possible to determine that coordination skills develop more effectively when students understand the purpose of each exercise and receive continuous pedagogical guidance. The use of video demonstration, mirror control, paired observation, and teacher feedback was considered particularly useful for improving movement awareness.

The methodological model proposed in the study was based on a progressive sequence. First, students performed simple coordination tasks in stable conditions. Then the tasks were complicated by changing the direction, speed, rhythm, starting position, support surface, or combination of movements. At the final stage, students performed integrated gymnastic combinations requiring balance, rhythm, orientation, and accurate transitions. Such organization allowed the formation of coordination skills to become systematic, safe, and pedagogically controlled.

Results

The results of the study showed that the formation of coordination skills in gymnastics becomes more effective when the training process is organized on the basis of a systematic, progressive, and pedagogically controlled methodology. Coordination skills did not develop equally in all students, because their initial physical readiness, motor experience, psychological confidence, flexibility, balance, and spatial orientation were different. However, when exercises were selected according to the principle of gradual complication and individual support, students demonstrated more stable progress in movement accuracy, body control, balance, rhythm, and confidence during gymnastic performance.

One of the main results was the improvement of students' ability to maintain static and dynamic balance. At the beginning of the learning process, many students experienced difficulties in holding stable body positions, especially during exercises requiring support on one leg, changes of direction, turns, or inverted positions. After the systematic use of balance tasks, posture control exercises, and gradual transition from simple positions to more complex movements, students became more confident in maintaining body alignment and controlling the center of gravity. This improvement was especially noticeable in exercises that required smooth transitions from one position to another.

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The development of spatial orientation was also observed as an important result. Gymnastic exercises such as rolls, turns, cartwheels, jumps, and acrobatic combinations require students to understand the position of the body in space. Initially, some students lost direction during rotational movements or performed elements with incorrect body placement. The use of preparatory drills, visual demonstration, assisted execution, and repeated performance in simplified conditions helped them better understand movement direction, amplitude, and body position. As a result, technical errors decreased and students became more capable of performing elements with greater confidence and precision.

The study also revealed positive changes in rhythm and movement synchronization. When rhythmic exercises, counting, music-based tasks, and tempo changes were included in lessons, students improved their ability to coordinate movements according to time and sequence. This was particularly important for gymnastic combinations, where separate elements must be connected smoothly and logically. Students who previously performed movements in a fragmented or tense manner gradually learned to combine actions into a more complete motor structure. Their movements became more fluent, coordinated, and expressive.

Another significant result was the increase in students' ability to differentiate muscular effort. In gymnastics, excessive tension often prevents correct execution, while insufficient tension may lead to instability and loss of control. Through repeated practice, corrective feedback, and exercises aimed at controlling amplitude and effort, students learned to regulate muscular tension more appropriately. This helped improve the quality of jumps, landings, balances, turns, and transitions. It also reduced unnecessary fatigue and made movements more economical.

The results confirmed that coordination training is closely connected with psychological readiness. Students who were afraid of complex or inverted movements initially avoided full execution or made many technical mistakes. The use of step-by-step teaching, partner support, safety assistance, and positive feedback reduced fear and increased confidence. As confidence grew, movement coordination also improved, because students were able to concentrate on technique rather than anxiety.

Overall, the results demonstrated that coordination skills in gymnastics are formed most successfully when exercises are organized from simple to complex,

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when students receive regular feedback, and when the teacher takes into account individual differences. The methodology helped improve balance, rhythm, spatial orientation, movement accuracy, muscular differentiation, and confidence. These findings confirm that coordination training should be considered a central component of gymnastics education in pedagogical universities specializing in sports.

Discussion

The formation of coordination skills in gymnastics should be discussed as a multidimensional pedagogical process in which physical, technical, psychological, and methodological factors interact with one another. Gymnastics differs from many other types of physical activity because it requires the learner to control the body in unusual positions, combine movements of different complexity, maintain balance under changing conditions, and perform actions with accuracy and rhythm. For this reason, coordination training cannot be reduced to simple repetition of exercises. It must be organized as a purposeful process that develops movement awareness, spatial perception, balance control, muscular regulation, and confidence.

The results of the study indicate that coordination skills develop more effectively when the teacher follows a gradual and structured methodology. In gymnastics, complex elements should not be introduced without preparatory exercises, because students may fail to understand the correct movement structure or experience fear. A roll, cartwheel, handstand, jump, or balance element must first be divided into simpler components. When students master body alignment, direction of movement, support position, and safe landing separately, they can later combine these components into a complete exercise. This confirms that the principle of gradualness is one of the most important methodological conditions for coordination development.

Another important issue is the role of feedback. Coordination is closely connected with the student's ability to feel and correct movement. However, beginners often do not notice their mistakes during performance. They may believe that the movement has been completed correctly, even when body position, rhythm, or balance is unstable. Therefore, teacher feedback, visual demonstration, partner observation, mirror control, and video analysis can significantly improve the learning process. Feedback helps students compare the required movement model

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with their own performance and understand what exactly needs to be corrected. In this sense, coordination training also develops analytical thinking and conscious motor control.

The discussion also shows that individualization is essential in gymnastics. Students may have different levels of flexibility, strength, balance, courage, and previous motor experience. A uniform task may be too easy for one student and too difficult for another. If the difficulty of the exercise does not correspond to the learner's ability, the effectiveness of training decreases. Overly simple exercises do not stimulate development, while excessively difficult exercises may cause fear, technical errors, or injury risk. Therefore, the teacher must select exercises according to individual readiness and gradually increase complexity when the student is prepared for the next stage.

Psychological readiness deserves special attention. Many gymnastic movements involve inversion, rotation, height, speed, or temporary loss of visual control. These situations may cause hesitation and fear, especially among students who do not have sufficient gymnastic experience. Fear negatively affects coordination because it increases muscle tension, disrupts rhythm, limits amplitude, and reduces movement confidence. Methodological support, safety assistance, partner help, and positive reinforcement create a favorable learning environment. When students feel safe, they perform movements more freely and accurately.

The formation of coordination skills in gymnastics also has professional significance for students of pedagogical universities. Future physical education teachers should be able not only to perform exercises but also to explain, demonstrate, simplify, correct, and safely organize them. Therefore, coordination training contributes to both personal motor development and professional pedagogical competence. A student who understands the methodology of coordination development can later teach gymnastic exercises more effectively to schoolchildren, athletes, or recreational groups.

Thus, the methodology of forming coordination skills in gymnastics should combine progressive exercise selection, technical explanation, repeated practice, variability, safety measures, individualization, and continuous feedback. Such an approach transforms gymnastics lessons into a conscious and developmental process where students learn to control movement, overcome difficulties, and acquire stable motor skills.

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Conclusion

The formation of coordination skills in gymnastics is one of the most important methodological tasks in the system of sports-oriented pedagogical education. Gymnastics requires accurate body control, balance, rhythm, spatial orientation, differentiated muscular effort, reaction speed, and the ability to combine several movements into a single motor structure. Therefore, coordination should not be understood only as a natural result of repeated exercise performance. It must be developed through a purposeful, systematic, and pedagogically grounded methodology that takes into account the physical, psychological, and individual characteristics of students.

The study showed that coordination skills are formed most effectively when gymnastic exercises are organized according to the principle of gradual complication. Students should first master simple body positions, posture control, elementary balance tasks, direction changes, and basic movement combinations. Only after this stage can more complex acrobatic elements, turns, jumps, apparatus-based movements, and integrated gymnastic combinations be introduced. Such a sequence helps students understand the structure of movement, reduce technical errors, and perform exercises with greater confidence and stability. The transition from simple to complex tasks is especially important in gymnastics because sudden complication may cause fear, excessive muscle tension, incorrect movement habits, and injury risk.

The effectiveness of coordination training also depends on the use of varied methodological tools. Preparatory exercises, balance tasks, rhythmic movements, acrobatic drills, partner support, visual demonstration, verbal explanation, mirror control, and video analysis contribute to the development of conscious motor control. These methods help students not only repeat the teacher's movements, but also analyze their own performance, identify mistakes, and understand how to correct them. In this respect, coordination development is closely connected with motor thinking, attention, self-assessment, and reflective learning.

Individualization is another essential condition for the successful formation of coordination skills. Students differ in their flexibility, strength, balance, courage, previous sports experience, and ability to orient themselves in space. For this reason, the same exercise cannot always produce the same pedagogical effect for all learners. The teacher must regulate the complexity, tempo, number of repetitions, assistance, and safety conditions according to each student's

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readiness. This approach helps maintain motivation, prevents overload, and creates favorable conditions for steady progress.

The development of coordination skills in gymnastics has not only practical but also professional significance for students of pedagogical universities. Future physical education teachers and coaches must know how to teach gymnastic exercises safely, clearly, and effectively. They should be able to divide complex movements into simpler parts, explain technical details, provide assistance, correct mistakes, and organize exercises according to the age and readiness of learners. Thus, coordination training contributes to the formation of both personal motor competence and professional pedagogical competence.

In conclusion, the methodology of forming coordination skills in gymnastics should be based on consistency, accessibility, variability, individualization, safety, and continuous feedback. When these principles are applied in practice, gymnastics lessons become more effective, developmental, and educationally valuable. Properly organized coordination training improves movement accuracy, balance, rhythm, spatial orientation, confidence, and technical performance. It also creates a strong foundation for mastering complex gymnastic elements and for preparing future specialists capable of organizing high-quality physical education and sports training.

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