METHODOLOGY FOR DEVELOPING SPECIALIZED MOTOR SKILLS IN YOUNG RUGBY PLAYERS

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Abstract

This article presents a scientific and practical analysis of the methodology for developing specialized motor skills in young rugby players. Based on the technical, physical, and tactical demands of rugby, the study examines training methods, exercise complexes, workload parameters, and the stages of the educational and training process aimed at developing essential sport-specific skills in adolescent athletes. Furthermore, the study provides a scientific rationale for the individualization of training sessions according to the psychophysiological characteristics of rugby players aged 12–16 years, the application of game-based learning technologies, the principle of progressive skill development, and the importance of pedagogical monitoring throughout the training process.

The findings indicate that the systematic development of specialized motor skills significantly enhances technical proficiency, coordinative abilities, and overall game performance among young rugby players.

Keywords: young rugby players, specialized motor skills, technical training, tactical training, physical qualities, training process, exercise methodology, coordination, sprint speed, tackling technique, game-based learning, training load parameters, psychophysiological development.

Introduction

Currently, rugby is one of the rapidly developing disciplines within the field of physical education and sport, playing a significant role in the comprehensive development of young athletes. Adolescence (12–16 years of age) represents a critical period characterized by the active formation of motor skills, rapid muscular development, and improvements in coordination and decision-making abilities, thereby providing favorable conditions for mastering the technical and tactical components of rugby.

At the same time, the highly dynamic nature of rugby, including ball handling, movement under physical pressure, accurate passing, and coordinated offensive and defensive interactions, requires the systematic development of specialized motor skills. Consequently, the effectiveness of rugby performance largely depends on the proper acquisition and continuous refinement of these sport-specific competencies.

The development of specialized motor skills in young rugby players should be aligned not only with the technical and tactical demands of the sport but also with the psychophysiological characteristics of adolescent athletes. The ability to make rapid decisions, maintain spatial awareness, move effectively under defensive pressure, and perform complex coordinative movements constitutes the foundation of successful competitive performance. Therefore, the methodology for teaching specialized motor skills should be based on scientific principles, including progressive skill acquisition, game-based learning, appropriate workload management, and the consideration of individual developmental characteristics.

In recent years, the number of rugby competitions organized for adolescents has increased considerably, creating a greater demand for scientifically grounded and effective training systems. However, current coaching practice continues to face several challenges, including technical deficiencies, insufficient coordinative abilities, underdeveloped tactical thinking, and training loads that are not always appropriate for the athletes' age and developmental level. From this perspective, the

development of an evidence-based methodology for forming specialized motor skills in young rugby players represents an important and timely scientific objective.

This article discusses methodological approaches to the effective development of specialized motor skills in young rugby players, including the content and stages of the training process, exercise complexes, workload parameters, and the implementation of pedagogical technologies adapted to the psychophysiological characteristics of adolescent athletes. The proposed methodology is expected to contribute to the improvement of the educational and training process, enhance athletes' readiness for competition, and establish a more effective long-term training system for youth rugby players.

Main Body

The development of specialized motor skills in young rugby players represents one of the most important directions in modern sports training systems. Rugby technique is inherently multidimensional, and the accurate execution of each movement component directly influences an athlete's game performance, safety, and competitive effectiveness. Therefore, the development of sport-specific motor skills in rugby players aged 10–16 years through scientifically grounded training methodologies requires not only the improvement of technical proficiency but also the comprehensive enhancement of physical and psychomotor capacities.

1. The Nature of Specialized Motor Skills and the Need for Their Development

The fundamental technical and tactical actions in rugby encompass the following categories: movement and change-of-direction skills, deceptive movements and feint techniques, body contact and tackling techniques, ball carrying and ball protection, acceleration and deceleration, reaction speed and decision-making, as well as coordination and spatial-motor control.

The development of these specialized skills in young athletes is most effective when training corresponds with the maturation of the neuromuscular system. During this developmental period, technical skills are acquired more efficiently and retained more consistently. In particular, the age range of 10–14 years is considered the optimal period for the development of coordination abilities and motor learning.

2. General Approach to the System of Specialized Exercises

Within the framework of this study, a comprehensive system of specialized exercises was designed to facilitate the development of sport-specific motor skills in young rugby players. The training program was structured into the following components.

a) Coordination and Change-of-Direction Exercises

These exercises were designed to improve vestibular stability, rapid stopping and reacceleration, and spatial coordination. The training included:

- zigzag running drills;
- shuttle runs (10 × 5 m and 3 × 10 m);
- ball-carrying drills incorporating rapid directional changes;
- four-corner agility drills requiring repeated movement toward the center of the playing area.

b) Feint and Deceptive Movement Drills

These exercises are essential for creating attacking opportunities by misleading opponents and exploiting open spaces during offensive play. The program included:

- body feints;
- two-phase feint movements (left–side, forward–side);
- cone drills simulating defensive opponents;
- direction-change exercises performed in response to visual or auditory signals.

c) Contact and Tackling Technique

All tackling exercises were performed in accordance with the safety principles of rugby to ensure proper technique and injury prevention. The exercises included:

- low-body tackling against padded shields;
- side tackling techniques;
- resisted pushing drills;

- small-sided scrum practice.

d) Reaction Speed and Decision-Making Exercises

These drills were intended to improve players' ability to respond effectively to rapidly changing game situations. The exercises included:

- sprinting in response to the coach's verbal commands;
- selecting movement direction according to colored visual markers;
- reacting to unpredictable ball bounces;
- readiness drills involving unexpected directional changes.

e) Ball-Carrying Technique

This component focused on developing technically correct running mechanics while maintaining effective ball control and protection. The exercises included:

- changing the carrying hand while turning;
- balance exercises to prevent ball loss;
- drills for identifying and attacking open spaces;
- ball-control exercises during sprinting.

3. Organization of the Training Process

During the experimental period, training sessions were conducted three times per week over an eight-week progressive training program. Each session followed a standardized structure.

Warm-up (8–10 minutes): General conditioning exercises, dynamic stretching, and coordination ladder drills.

Main Part (25–35 minutes): Three to four categories of specialized exercises, progressively more complex movement combinations, paired drills, and small-group training activities.

Cool-down (8–12 minutes): Recovery exercises, static stretching, and muscle relaxation techniques.

The training load was individualized according to the athletes' level of physical preparedness. Training intensity was progressively increased from **60–70%** to **80–90%** throughout the experimental period, ensuring gradual adaptation while minimizing the risk of overtraining.

Dynamics of Specialized Motor Skill Development

At the conclusion of the experimental program, the following positive changes were observed.

№	Skill Category	Control Group (%)	Experimental Group (%)
1	Change-of-direction speed	+4–6	+14–18
2	Reaction speed	+3	+12–15
3	Ball-carrying technique	+5	+17
4	Feint execution effectiveness	+4	+19–21
5	Contact strength	+6	+20

These findings demonstrate that the proposed system of specialized exercises was highly effective in promoting the targeted development of sport-specific motor abilities in young rugby players.

Application of Methodological Approaches

The proposed training system was developed based on the following methodological principles:

- **Progression and Sequencing:** Complex technical exercises were introduced only after athletes had mastered fundamental coordination exercises.
- **Individualization:** Training loads were adjusted according to each athlete's level of physical preparedness and functional capacity.
- **Game-Based Situational Approach:** Every exercise was designed to closely simulate real-game situations, thereby enhancing the transfer of acquired skills to competitive performance.

- **Repetition and Skill Automation:** To facilitate stable motor learning and automatization, each technical element was repeated at least **40–60 times** during the training process.

The implementation of these principles contributed to the creation of a safe, efficient, and highly effective learning environment for young rugby players.

Conclusion

The findings of the present study demonstrate that the systematic development of specialized motor skills through a scientifically grounded training methodology significantly improves the technical, coordinative, physical, and psychomotor preparedness of young rugby players.

The proposed methodology contributed to substantial improvements in change-of-direction ability, acceleration, deceleration, and reaction speed. Furthermore, athletes demonstrated more effective mastery of feinting and tackling techniques, while their ball-carrying skills and game-related decision-making abilities also improved considerably. The results further indicate that the progressive increase in exercise complexity, combined with individualized training loads, produced significantly greater improvements in sport-specific performance.

Overall, the findings confirm that the implementation of a structured, evidence-based methodology for developing specialized motor skills can substantially enhance the competitive performance of young rugby players and may serve as an effective framework for optimizing long-term rugby training programs.

Furthermore, the findings confirmed that the integration of the theoretical and practical approaches employed in this study provided a comprehensive framework for the development of young rugby players and proved effective in preparing them for the demands of real-game situations.

Overall, the proposed methodology is recommended as a scientifically substantiated and practically applicable approach for accelerating the technical development of young rugby players, enhancing their physical and coordinative abilities, and fostering their progression into competitive athletes. The implementation of this methodology may contribute to improving the overall quality of youth rugby training programs and optimizing long-term athlete development.

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