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METHODS AND MEANS RELATED TO RUGBY TAG IN SECONDARY SCHOOL CASE STUDY

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Abstract Background**.** Physical inactivity among school-aged children has become a growing concern, particularly during the sensitive period of puberty, where sedentary behaviors threaten the physical, psychological, and intellectual development of youth. Schools play a vital role in addressing this issue, offering structured physical education lessons that promote long-term engagement in movement and sport. One promising avenue for increasing motivation and participation in physical education is through team sports that combine playfulness with social interaction. Tag rugby, a non-contact version of rugby, offers an ideal introduction to the game, particularly for middle school students, by combining fun, dynamic gameplay with the development of motor, cognitive, and social skills.
In recent years, several studies have highlighted the educational value of tag rugby in schools, demonstrating its capacity to foster teamwork, enhance tactical understanding, and support the holistic development of children. Despite the growing international attention, the popularity and application of tag rugby remain limited in Romania, underscoring the need for targeted pedagogical research and innovation. This study was motivated by the desire to explore and optimize the teaching methods and tools used for introducing tag rugby to middle school students, aiming to increase their enthusiasm for physical activity and contribute to the promotion of this sport within the Romanian educational system.
Objectives.The purpose of this paper was to dentify the teaching-learning methods and means used for the initiation of pupils in rugby-tag at the gymnasium level.
Methods. Bibliographic study method, observation method, case study method, statistical-mathematical method.
Results.The intervention programme is practical and can be successfully applied since there were significant differences from the initial to the final test at the level of arithmetic means, namely, in test 1 the difference is 2.4 and 1.95 points, in test 2 it is 2.9 and 1.55 points, in test 3 the value is 2 and in the last test the difference is 2 points and 1.43 seconds.
At the initial test the group of students obtained low results in conditions of moderate homogeneity presented by the minimum value 0.10% and maximum 0.19%, later after the application of the intervention programme by the specialist teacher, the students have gained significant progress in conditions of homogeneity with high degree, which is represented by the coefficient of variability minimum 0.06% and maximum 0.1 and than in test 3, the value is 0.11%, which tells us that in the results in view of the technical detriment of rugby tag, the group presented homogeneity with moderate character.
Conclusion. Research has shown that initiation into tag rugby at middle school level is most effective through the combined use of the global method, the playful method, the small-sided and isolated game phases method, and the global-analytical-global algorithm. It has also been confirmed that heuristic methods, based on personal investigation and problem solving in game situations, are essential for the development of technical and tactical skills and analytical thinking. In addition, the use of specific exercises, preparatory games, and the actual game of tag rugby proved to be practical and effective, leading to significant progress in the motor, cognitive, and affective performance of students.

Keywords: Tag rugby, teaching-learning methods and means, physical education, middle school, motor skills, teamwork.

Introduction

According to Dreve (2019), rugby is a long-lasting sport, with interruptions in play due to set pieces or penalties imposed by the rules. The actions encountered in any game are extremely varied and involve the use of all motor skills.

The introduction of rugby-tag within the middle school physical education framework offers an opportunity to diversify instructional approaches and increase lesson attractiveness, particularly in a period when students' motivation for structured physical activity often declines. As a non-contact and simplified variant of rugby, rugby-tag promotes active participation in a controlled environment, where the focus shifts from contact-based skills to tactical understanding, spatial awareness, teamwork, and cognitive engagement. These elements are essential in physical education settings, where the goals extend beyond physical conditioning to include social, psychological, and educational dimensions.

According to Dreve (2017), like any other sport, rugby has several fundamental components that define it: technique, tactics, physical, psychological, and other components. Understanding how these are combined leads to performance. Currently, most coaches closely monitor the development of the physical component, as the technical and tactical components cannot be maintained at a high level without good conditioning.

Rugby-tag has been increasingly recognized in educational research as a sport that stimulates not only the learning of basic motor patterns (such as running, passing, and evasion techniques) but also the acquisition of decision-making skills, cooperative strategies, and the capacity to apply learned techniques within game contexts. Importantly, the non-contact nature of rugby-tag reduces barriers to participation for a wide range of students, making it a suitable and inclusive option within the school setting.

In light of growing concerns about physical inactivity and its long-term health consequences, schools have a critical role in promoting physical literacy, defined not only by movement capacity but also by confidence, motivation, and understanding of game dynamics. This study investigates how the systematic application of methodological strategies – including preparatory games, algorithmic teaching, and heuristic methods – can enhance the technical-tactical learning process in rugby-tag and contribute to improving both the physical and cognitive engagement of middle school students.

Subjects and research

As part of the research, a group of 20 fifth-grade students participated, consisting of 12 girls and 8 boys. It is important to note that these students had already developed a set of fundamental and sport-specific motor skills and abilities related to rugby-tag during their primary school years.

Organisation of research

The period during which the scientific research was organized and conducted was from February 20 to May 11, 2023. The case study involving the fifth-grade class took place at "Sfântul Andrei" Gymnasium School in Bucharest, Romania. The fifth-grade students participated in two weekly physical education lessons focused on rugby – tag - specific themes.

Instruments used in the study

In our scientific research, we used the following tools: four assessment tests, the fifth-grade learning unit for tag rugby, and observation protocols.

At the beginning and end of the case study, we conducted an initial test and a final test at the fifth-grade level. Both tests consisted of four tests through which we assessed the level of technical and tactical preparation of the students.

We note that in tests 1, 2, and 4, students were evaluated twice, with the first grade representing their technical preparation level and the second grade illustrating their success in performing the given exercise, represented by the number of successful passes out of 10 in tests 1 and 2, and the time taken to complete the course in test 4. Test 3 evaluates the level of tactical preparation by means of a grade.

Test 1 – Passing from a standing position

Objective: To evaluate passing technique from a standing position, level of execution (position, hands, arms) and number of successful passes out of 10.

Description: Two students face each other (5 meters apart), passing the ball from a standing position, at hip level.

Dosage: 1 set, 10 repetitions each.

Materials: 10 balls, stopwatch, whistle, 20 cones.

Test 2 – Passing while running "in the tunnel"

Objective: to evaluate the technical process of passing the ball while running from the hip level. The correctness of the execution of the process from a technical and regulatory point of view (passing backwards) as well as the number of passes executed while running, out of the total number: 10, are taken into account.

Description: The subjects form two columns (they will remain in place during the exercise) facing column number 3 (which will be running). The students in the first two columns are 7-8 meters apart. The subjects in column number 1 each have a balloon in their hands. One by one, the students in column 3 start running. They perform the following: catch the balloon (from the front), run with the balloon held in both hands, and pass the balloon backwards.

Methodological instructions: there will be 5 students in columns 1 and 2 (10 in total), and the remaining 10 students will stand in column 3. Column 3 will be tested in the given exercise. The first series will be carried out to understand the exercise, as the test is complex and completely unknown to the students; the results obtained in the next 2 series will then be recorded. After 3 series, column 3 will be changed, with the students from the other 2 columns.

Materials: 11 cleats, 5 balls;

Test 3 – The big square

Objective: to assess the technical and tactical skills of the students. Each student will be graded on their tactical conduct.

Description: a square with sides measuring 10 meters will be formed, with two defenders positioned on each side. Four students will attack from the center of the square with the aim of scoring a try on any of the sides of the square. The try is not scored if the ball carrier crosses the goal line and is touched with two hands by a defender. Defenders will move strictly sideways to the right or left along the length of their own side. The attackers can move freely within the square.

Methodological instructions: after the 5-minute half, the attackers will switch with 4 defenders and the exercise will resume.

Teaching materials: 4 cones, 1 ball;

Dosage: 1 series, 5 minutes.

Test 4 – Technical course

Objective: To assess and grade the technical skills specific to tag rugby and record the time taken to complete the course.

Description: One at a time, with the ball in their hands, students will perform the following: running forward (distance of 5 meters), running backward (distance of 3 meters), running with a change of

direction between 6 cones–passing the ball from a standing position with both hands–catching the ball–running with the ball in their hands.
Methodological instructions: students will form a line and take turns performing the given route twice. The first time, students will familiarize themselves with the exercise, and on the second attempt, the results will be recorded.
Teaching materials: 1 balloon, 6 cones;
Dosage: 2 sets.

Results and Discussions

Table 1. Initial Testing Results

Student	Test 1 Note	Test 1 Passes	Test 2 Note	Test 2 Passes	Test 3 Note	Test 4 Time (seconds)
A.B.	7	7	5	8	7	15
A.C.	6	7	5	8	6	17.05
A.E.	6	8	5	8	6	15.55
B.A.	5	6	6	7	5	15.32
C.A.	6	7	5	7	5	14.20
C.C.	5	8	5	8	6	14.10
D.A.	6	7	6	7	6	18.10
D.O.	6	5	6	8	5	17.05
E.E.	6	5	6	8	6	18
E.H.	7	8	7	8	8	17.10
E.V.	8	8	7	7	9	14.10
F.G.	6	7	7	7	7	15.40
F.M.	9	10	7	9	9	15.30
G.A.	7	9	6	9	8	18
I.K.	6	5	6	7	6	19
I.M.	7	9	8	7	7	15
L.L.	8	7	8	8	7	19.05
L.M.	5	6	6	7	6	19.30
M.E.	5	7	6	6	5	18.10
M.V.	6	7	6	6	6	16.45

Table 2. Final testing results

Student	Test 1 Note	Test 1 Passes	Test 2 Note	Test 2 Passes	Test 3 Note	Test 4 Time (seconds)
A.B.	9	10	10	10	9	14.45
A.C.	8	10	10	10	8	16
A.E.	8	10	10	10	8	15
B.A.	9	9	8	9	7	14.50
C.A.	8	10	8	9	7	14
C.C.	9	9	8	9	8	13.50
D.A.	9	9	7	9	8	16.30
D.O.	8	8	10	9	8	16
E.E.	8	9	9	9	8	16.20
E.H.	9	9	10	9	10	15.1
E.V.	10	9	9	8	10	14
F.G.	9	10	9	8	9	14

F.M.	10	10	10	10	10	14.05
G.A.	9	9	9	10	10	15
I.K.	8	7	9	9	9	15.50
I.M.	10	9	10	9	8	14.3
L.L.	10	9	10	10	8	17
L.M.	8	8	8	9	9	16.5
M.E.	7	9	8	7	8	16
M.V.	9	9	9	8	9	15

Table 3. Statistical Analysis of Initial Testing Results

Test	Passing the ball from a standing position		Passes from running „in the tunnel"		The big square	Technical route	
Expression of assessment through:	Note – execution technique	Number – passes out of 10	Note – execution technique	Number – passes out of 10	Note – tactical baggage	Note – technique	Completion time in seconds
Mean	6.35	7.15	6.15	7.5	6.5	6.5	16.55
Standard deviation	1.08	1.34	0.93	0.87	1.23	0.88	1.73
Variability coefficient	0.17%	0.18%	0.15%	0.11%	0.19%	0.13%	0.10%
Min.	5	5	5	6	5	5	19.30
Max.	9	10	8	9	9	9	14.10

Table 4. Statistical Analysis of Final Testing Results

Test	Passing the ball from a standing position		Passes from running „in the tunnel"		The big square	Technical route	
Expression of assessment through:	Note – execution technique	Number – passes out of 10	Note – execution technique	Number – passes out of 10	Note – tactical baggage	Note – technique	Completion time in seconds
Mean	8.75	9.1	9.05	9.05	8.5	9.4	15.12
Standard deviation	0.85	0.78	0.94	0.82	0.94	0.59	1.01
Variability coefficient	0.09%	0.08%	0.1%	0.09%	0.11%	0.06%	0.06%
Min.	7	7	7	7	7	8	17
Max.	10	10	10	10	10	10	13.5

According to tables 3 and 4, for the Passing the Ball from a Standing Position test, the arithmetic mean for technical execution improved from 6.35 in the initial phase to 8.75 in the final phase, reflecting a shift from modest to strong results. For the number of successful passes out of 10, the average rose from 7.15 to 9.1, indicating a transition from moderate to excellent performance. In the Passes from Running "in the Tunnel" test, the average technical execution increased from 6.15 to 9.05, showing clear improvement. The average number of successful passes also improved from 7.5 to 9.05, reflecting the group's significant advancement in practical execution.

The Big Square tactical test showed a rise in the arithmetic mean from 6.5 to 8.5, moving from weak to good tactical understanding and application. For the Technical Route test, the execution

score increased from 6.5 to 9.4, while the average course completion time improved from 16.55 seconds to 15.12 seconds, indicating enhanced technical precision and speed.

Across all tests and assessment forms, the final phase showed not only higher arithmetic means but also lower variability and standard deviations, demonstrating improved group consistency and cohesion. The comparison confirms that the intervention positively impacted students' technical, tactical, and execution-related capacities.

Table 5. Wilcoxon test results

	Test 1		Test 2		Test 3	Test 4	
Assessment	1.1	1.2	2.1			4.1	4.2
W value	0	0	0	0	0	0	0
Z value	–3.91	–3.62	–3.91	–3.72	–3.82	–3.91	–3.91
p	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Effect size (r)	0.87	0.80	0.87	0.83	0.85	0.87	0.87

Given that the Wilcoxon test value is 0, the significance threshold is less than 0.05 ($p<0.05$), the effect size for tests 1.1, 2.1, 4.1, and 4.2 is 0.87, for test 1.2=0.80, and test 3=0.85, the null hypothesis is rejected and it appears that the training program is highly applicable.

Conclusions

Rugby tag, with its playful, original, and novel approach, diversifies the teaching - learning process and, as a result, makes physical education and sports classes particularly appealing to children.

The main methods and means of initiation into tag rugby are the global method, the playful method, the method of using phases of the game in a restricted and isolated setting, combined with the following means: exercises, preparatory games, and the actual game of tag rugby.

The use of the global-analytical-global algorithm method within the means that involve specific exercises for learning technical and tactical elements is beneficial. However, when it comes to learning-play means, heuristic methods prove to be the most appropriate. These methods encourage personal investigation and give the subject the freedom to choose how to solve situations encountered on the field. Through play, students develop analytical and rational thinking, implicitly gaining emotional, motor, and somato-functional benefits.

Through preparatory games, students gradually become familiar with the rules and understand the logic of the game. In addition, the competitive element creates an incentive to participate and develop a passion for this fascinating sport.

The intervention program is practical and can be applied successfully, as significant differences were recorded between the initial and final tests in terms of arithmetic means, namely, in test 1 the difference is 2.4 and 1.95 points, in test 2 it is 2.9 and 1.55 points, in test 3 the value is 2 and in the last test the difference is 2 points and 1.43 seconds.

In the initial test, the group of students achieved low results in conditions of moderate homogeneity, with a minimum value of 0.10% and a maximum of 0.19%. Subsequently, after the intervention program was implemented by the specialist teacher, the students made significant progress in conditions of high homogeneity, represented by a minimum coefficient of variability of

0.06% and a maximum of 0.1. In test 3, the value is 0.11%, which tells us that in terms of the technical detriment of tag rugby, the group showed moderate homogeneity.

We propose, within the middle school cycle, an algorithm for initiation into the technical and tactical basics of tag rugby: start the lesson with an introductory-thematic game that aims to: capturing the attention and engaging the students emotionally, continuing with individual exercises, then group exercises in easy and very easy conditions, gradually increasing the difficulty, and ending the lesson with a game of tag rugby, as this team sport is best learned through playing tag rugby itself.

Authors' Contributions

Both authors played an important role in shaping and finalizing this research.

Murza Vasiluţa oversaw the conceptualization and design of the research, coordinated data collection, and contributed to the statistical processing and interpretation of the results.

Badea Dan contributed to the critical assessment, supported the literature review, formatted the final version, and coordinated the referencing.

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