

MODEL REGARDING TECHNICAL AND TACTICAL TRAINING IN HANDBALL FOR THE HIGH SCHOOL TEAM

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Abstract

The aim of this research was to implement a technical–tactical training model in handball within a high school representative team. Multiple tests were conducted to assess speed, agility, and handball-specific skills. The study was conducted on 13 students aged between 15 and 18 years, members of the representative handball team of the National College “Petru Rareș” in Suceava. The training program was integrated into handball skill-development lessons and adapted to the specific characteristics of the participants. To evaluate the effectiveness of the proposed model, a set of eight assessment tests was applied, targeting both general and handball-specific speed as well as fundamental technical elements of the game. After the implementation of the training model twice per week, improvements were observed across all administered tests and the team achieved positive results in school competitions. The exercises contributed to the enhancement of performance indices.

Introduction

Handball is characterized by a high degree of complexity of motor acts and motor actions, which impose considerable physiological demands on athletes. The nature of the specific effort varies according to the training period and represents a fundamental criterion in the selection of specific training means [1]. From a physiological perspective, handball belongs to the category of team sports that require high-intensity effort, characterized by alternating maximal and supramaximal intensities. Athletes are exposed to substantial physical demands in almost all phases of play, regardless of their playing position [2].

In recent decades, handball has undergone significant transformations in terms of both game philosophy and performance requirements, leading to a clear

differentiation between the contemporary game and its original form. Modern high-performance handball is marked by profound changes in technical execution and by the predominance of specific motor qualities among players. Among the most notable developments are the increased speed of execution of technical–tactical actions, which has significantly altered the tempo and intensity of the game; the growing importance of direct attacking play as an effective solution in a wide range of game situations; and the rapid transition from defense to attack, which often prevents the defensive unit from achieving timely organization and balance [3].

With regard to the characteristics of modern handball, further developments observed in contemporary play include increased precision in the execution of technical and tactical actions, as well as the refinement of individual technical playing styles; a high speed of play in all game phases, leading to the constant disruption of both organized offensive and defensive systems; and the widespread use of continuous pressing, accompanied by an overall increase in the number of game actions performed in each phase of play [4], [5].

In the present study, the game of handball was analyzed within a representative high school team. As a means of physical education, handball makes essential and significant contributions to the overall development of students, from early childhood through secondary education. Within the high school context, handball occupies an important position among sporting activities due to its educational, formative, and recreational value. The practice of handball at the high school level provides opportunities for the identification and development of sporting talent, while simultaneously fostering discipline and personal responsibility. Moreover, it creates an attractive framework for student involvement in extracurricular activities, thereby strengthening their sense of belonging to the school community.

The school representative team plays a major formative and educational role, representing the institution with distinction in sports competitions and contributing to the creation of a positive atmosphere among students. The formation of handball teams primarily involves a carefully structured selection process. Selection has a decisive influence on performance outcomes, as these depend not only on the competencies of coaches but also on the characteristics and potential of the students. At present, the selection process in handball has become increasingly challenging, as most sports target similar somatic profiles, seeking individuals with comparable physical and motor qualities [6].

Nevertheless, the selection process in sport is conducted based on a set of well-defined criteria, namely medical–biological criteria, somatic criteria, motor criteria, and psychological criteria [7]. In addition to these, a series of psychological determinants of selection are also considered, which are classified into psychosocial factors and psychological factors proper [8].

Material-method

The aim of this research was to implement a technical–tactical training model in handball designed to achieve competitive performance with the high school representative handball team. In this regard, several assessment tests were employed, specifically four tests designed to evaluate general speed and handball-specific speed and four tests aimed to evaluate each handball technical element. *The research methods* used was method of study of specialized literature, method of analysis, test and measurement method, graphical method, tabel method, statistical and mathematical method [9]. The experiment was conducted on high school students from the National College “Petru Rareș” in Suceava (grades IX–XII). The participants (n=13), aged between 15 and 18 years, were selected to be members of the school’s representative handball team. All of them gave their written consent and the local ethics committee approved the protocol of the study. The data on which the measurements were made was 2024-2025. *Procedures.* The following tests were administered: 10m Sprint Test, 20m Sprint Test, Speed dribbling – 25 m, Speed dribbling – 30 m, Pair passing drill, Shooting on goal, Triangular movement drill, Technical obstacle course. The tests were administered in accordance with the methodological principles specific to measurement and evaluation. [10].

Results and discussions

In tables 1-4 from below are presented the results of the descriptive data of all participants. Table 1-2 shows the means (X), standard deviations (SD), coefficient of variability (CV), minimum value (Min) and maximum value (Max) at the speed tests. Table 3-4 shows descriptive data for the tehniclal handball tests. Furthermore, the inserted graphical models present the arithmetic means calculated at the initial and final assessments. The charts are vertical bar charts, visually illustrating the differences between the two testing moments.

Table 1. Statistical indicators of specific speed tests – initial assessments

	10m Sprint Test	20m Sprint Test	Speed dribbling – 25 m	Speed dribbling – 30 m
X	2.10	3.40	4.79	6.69
SD	0.15	0.21	0.40	0.83
CV	7.37	6.07	8.31	12.43
Min	1.91	3.10	4.26	5.45
Max	2.53	3.78	5.78	8.19

Table 2. Statistical indicators of specific speed tests – final assessments

	10m Sprint Test	20m Sprint Test	Speed dribbling – 25 m	Speed dribbling – 30 m
X	1.84	2.97	4.11	6.03
SD	0.11	0.14	0.16	0.61
CV	5.82	4.55	3.86	10.16
Min	1.69	2.75	3.78	5.12
Max	2.01	3.17	4.33	7.01

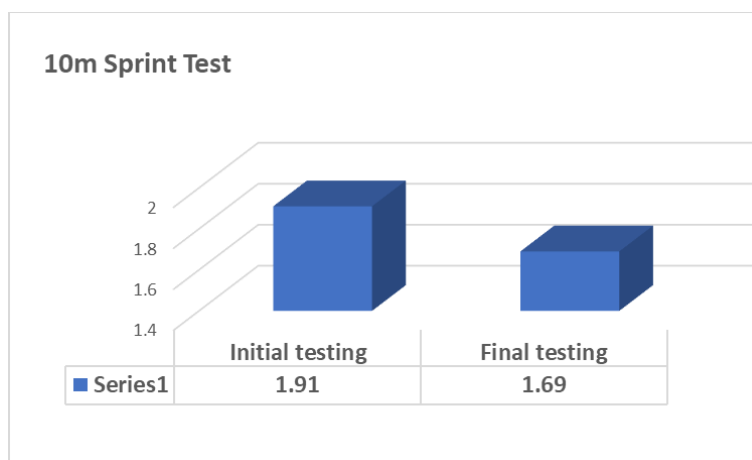


Figure 1. 10m Sprint Test

As shown in figure 1, in the 10m sprint test, an average time of 1.91 seconds was recorded at the initial testing, while the final testing showed an average time of 1.69 seconds. In the second test— 20m sprint test, the average time at the initial testing was 3.10 seconds, whereas at the final testing it was 2.75 seconds, the calculated difference being 0.35 seconds. Improvements were observed in both speed evaluation tests. The exercises performed by the team’s students led to improved performance results.”

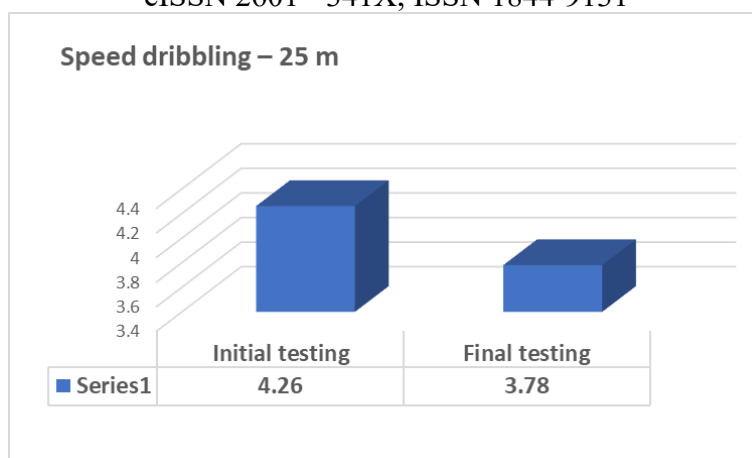


Figure 2. Speed dribbling – 25 m

Figure 2 highlights the results obtained at 25m speed dribbling on 25 meter, where the arithmetic mean recorded at the initial assessment was 4.26 seconds, decreasing to 3.78 seconds at the final assessment. The calculated difference of 0.48 seconds reflects a significant improvement in the performance of the participants. In the second handball specific speed test—30m dribbling between cones, the arithmetic mean decreased from 5.45 seconds at the initial assessment to 5.12 seconds at the final assessment. The observed differences indicate progress in handball specific speed among the members of the school representative team. The training exercises focused on speed development contributed to the enhancement of the evaluated performance indices.

Table 3. Statistical indicators of specific handball tests – initial assessments

	Pair passing drill	Shooting on goal	Triangular movement drill	Technical obstacle course
X	21.77	1.92	17.38	14.08
SD	2.09	1.26	1.49	0.72
CV	9.59	65.30	8.56	5.12
Min	19.00	0.00	15.09	12.80
Max	24.00	4.00	19.91	15.34

Table 4. Statistical indicators of specific handball tests – final assessments

	Pair passing drill	Shooting on goal	Triangular movement drill	Technical obstacle course
X	26.31	3.23	15.82	13.09
SD	1.93	0.60	0.77	0.50
CV	7.34	18.54	4.89	3.85
Min	23.00	2.00	14.58	12.12
Max	29.00	4.00	17.42	13.78

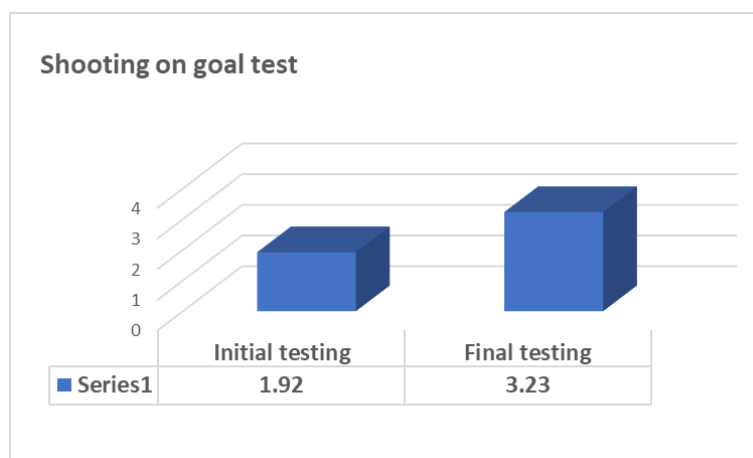


Fig.3 Shooting on goal test

At the shooting on goal test, the arithmetic mean recorded during the initial assessment was 1.92 successful shots, which increased to 3.23 successful shots at the final assessment, reflecting an improvement of 1.31 shots. At the pair passing drill test in 30 seconds, the initial mean performance was 21.77 passes over a 5-meter distance between partners, increasing to 26.31 passes at the final assessment, representing a gain of 4.54 passes. These results indicate a significant enhancement in the technical execution of shooting and passing skills following the applied training program.

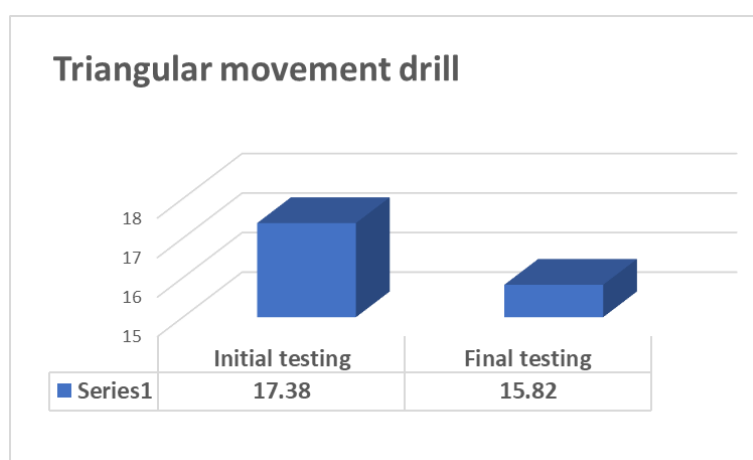


Fig.4 Triangular movement drill

In the triangular movement drill test, the arithmetic mean at the initial assessment was 17.38 seconds, decreasing to 15.82 seconds at the final assessment, representing a difference of 1.56 seconds. In the final test – technical obstacle course, the initial mean was 14.08 seconds, while at the final assessment it decreased to 13.09 seconds, with a calculated difference of 0.99 seconds, indicating measurable improvement in the performance of the team members.

Conclusions

Systematic technical–tactical training in handball, adapted to the specific characteristics of the participants, represents a fundamental factor in enhancing sports performance. Through the strategic integration of technical exercises, tactical training, and physical preparation, this process ensures not only the development of motor skills and tactical thinking, but also the cultivation of essential values such as discipline, cooperation, and respect. The activities carried out within the school representative team contribute both to the development of individual sporting abilities and to the strengthening of collective cohesion. Periodic assessment and the continuous adjustment of the training process ensure steady progress and maximum efficiency in achieving the established objectives. In this way, handball confirms not only its role as a competitive sport, but also its educational function, being capable of shaping character and fostering responsible and motivated young individuals.

Based on the findings presented, the research hypotheses were validated. The technical–tactical training program implemented during the handball skill-development lessons with the school representative team led to the improvement of specific technical elements. Superior results obtained in the tests assessing each technical component of the game, as well as handball-specific speed, further supported the stated hypothesis.

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