

THE WEIGHT OF TRAINING FACTORS IN THE PREPARATION OF SERVE AND SPIKE IN THE VOLLEYBALL GAME

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Abstract:

The weight of the training factors has a defining role in the preparation process of spike and serve in the volleyball game. Depending on how we organize them we can have different results.

I have proposed a training plan that also has a specific component, video analysis.

Following the final tests, subjects in the experimental group performed better than those in the control group.

Introduction

In sports games, including volleyball, the complexity of the training system is greatly amplified by the diversity of specific motor skills that are manifested in various conditions, in relation to opponents and teammates. [1, 5].

The training of technical skills in various tactical situations, based on the physical and mental development of athletes, is the way forward in team sports, to improve performance [11,12, 13]. To this is added the quality of the training process, the professional capacity of the coach, the material base and the management of the activity. All, in the context of the trends and directions of game development, against the background of the changes in regulations imposed by the increase in their dynamism, attractiveness and spectacularity. [3, 6]

The organization of the training process, viewed from a methodical point of view, is characterized by uniqueness. [8, 9]. Every coach, even though he follows a well-designed training plan, will undoubtedly leave his mark on the evolution of the athletes around him. [14].

The complex term "training" is defined in the context of specialized literature in several forms [2, 4, 7], but the background, in principle, is the same. Thus, "Training is a process of adaptation; adaptation itself represents, first of all, a series of adaptive biosynthesis processes of some enzymatic and structural proteins. Only the knowledge of adaptive processes and the consideration of their legalities can help us advance, both in theory and in training methodology." is the definition given by Tschien O. [15].

Material method

We adapted a training variant according to Ionescu V.I., Demian M. to our needs. [10].

Tab. 1. Training variant

| TRAINING FACTORS | 15-16 YEARS | |
|---|-----------------------|------------|
| | No. of training hours | percentage |
| The physical component | 165 | 30% |
| General physics | 88 | 16% |
| Function | 33 | 6% |
| Morphologically | 27.5 | 5% |
| motricity | 27.5 | 5% |
| Specific physics | 77 | 14% |
| The action of the segment | 22 | 4% |
| The muscle chains involved in important action | 22 | 4% |
| The technical component | 110 | 20% |
| Isolated technical procedures | 55 | 10% |
| Technical procedures in a game situation | 55 | 10% |
| The tactical and psychological component | 110 | 20% |
| Tactical actions in defense | 55 | 10% |
| Tactical actions in attack | 55 | 10% |
| Tactical actions in the game with taking decision immediately | 22 | 4% |
| The specific component (video analysis) | 44 | 8% |
| Official and verification games | 99 | 18% |
| Total | 550 | 100% |

The research was carried out between August and June on 15 sportsmen from LPS Piatra-Neamț who formed the control group and 15 athletes from CSS “Nicu-Gane” Fălticeni, who formed the experiment group. Athletes of the control group trained according to a standard schedule, and the experiment group had a different weight of the training factors in the preparation process of the attack in the volleyball game

Hypothesis We started from the premise that using other weights in the training process, relying on video analysis, we will obtain superior results in the experimental group.

Work tasks:

Following this work we want:

- to achieve better results in the main technical procedures of the spike and serve in the game of volleyball;

- to find ways to maximize the results obtained in the final tests;
- to prove that the premise from which we started is true and that the experiment has value;

The methods used in the research are: the study of the specialized literature, the experimental method, the video and biomechanical analysis method and the graphical and tabular method.

Results:

Following initial and final testing, we have obtained a number of results that have been analyzed and statistically compared.

Tab.2. Statistical indicators

| N r. | Technical process | Grups and statistics | Statistical indicators | | | |
|---------|---|----------------------------|----------------------------|--------------------------|------|--------|
| | | | Initial $\bar{X} \pm m$ | Final $\bar{X} \pm m$ | t | P |
| 1 | Volleball serve in zone 1 or 5 | M | 42,31±3,21 | 40,06±3,18 | 0,74 | > 0,05 |
| | | E | 42,04±3,22 | 30,04±3,14 | 4,00 | < 0,01 |
| | | t | 0,06 | 2,24 | — | — |
| | | P | > 0,05 | < 0,05 | — | — |
| 2 | Spike from the ball thrown by the coach | M | 41,75±3,23 | 39,68±3,19 | 0,68 | > 0,05 |
| | | E | 42,27±3,20 | 30,18±3,15 | 4,03 | < 0,01 |
| | | t | 0,11 | 2,12 | — | — |
| | | P | > 0,05 | < 0,05 | — | — |

Legendă: E – Grupa experiment, M – Grupa martor
 n= 15; P - 0,05; 0,01; 0,001. r = 0,553
 f = 28; t = 2,048 2,763 3,674
 f = 14; t = 2,145 2,977 4,140

The most mistakes obtained in the technical procedure - Serve in zone 1 or 5 were recorded in the "contact with the ball" phase. From the video analysis it appears that most of the execution mistakes were made following the wrong angle of throwing the ball and following the lack of effect given to the ball by flexing the palm at the moment of contact. For this reason, in training the experimental group, we approached a series of means whose purpose was correction these mistakes. An important role was played by the athlete's orientation in space, which made him capable to throw and hit the ball at the right moment, characterizing a successful execution.

Discussions

Analyzing from a statistical-mathematical point of view, the arithmetic mean of the control group, at the initial testing is 42.31 execution errors, with an average error $\pm m=3.21$, and at the final testing, is 40.06 execution errors, with an average error $\pm m= 3.18$. Experiment group, at testing initial, obtains an arithmetic

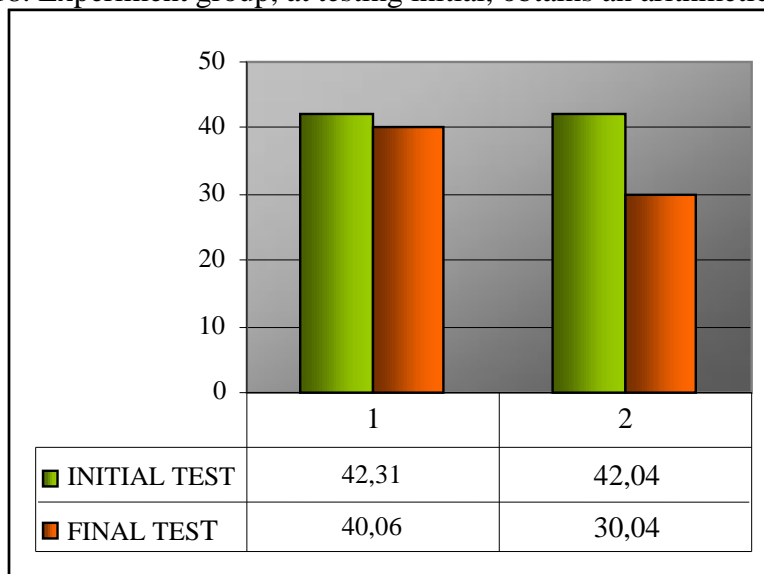


Fig.1. Serve in zone 1 or 5

average of 42.04 execution errors, with an average error of $\pm m=0.3.22$, and at the final test 30.04 execution errors, with an average error $\pm m=3.14$. Interpreting the differences of the control group tests, we note that the calculated "t" is 0.74, lower than the tabulated "t", $P>0.05$, which indicates that the differences between tests are insignificant. Regarding the tests of the experimental group, we note that the calculated "t" is 4.00, higher than the tabular "t", $P<0.01$, which proves that the differences between the tests are significant, in favor of the group experiment.

At the second test, the experimental group, at the initial test, obtains an arithmetic mean of 42.27 execution errors, with an average error of $\pm m=3.20$, and at the final test, 30.18 execution errors, with an average error $\pm m=3.15$. Interpreting

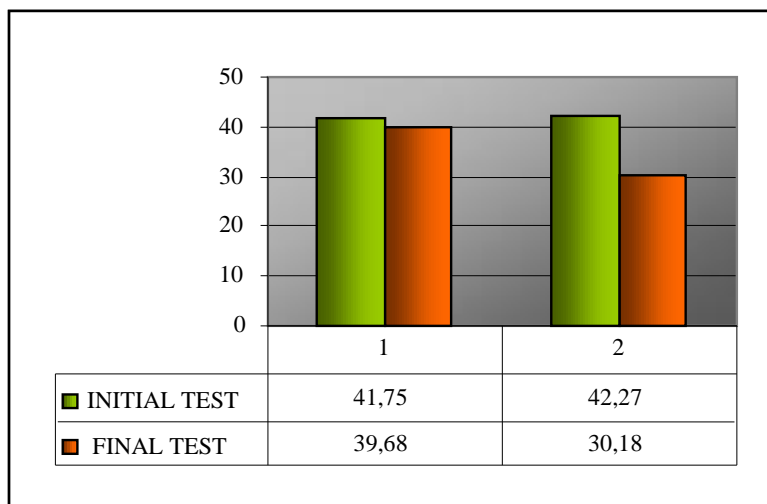


Fig.2. Spike from the ball thrown by the coach

the differences between the tests of the control group, we notice that the calculated "t" is 0.68, lower than the tabular "t", $P > 0.05$, which indicates that the differences between the tests are insignificant. Regarding the tests of the experiment group, we note that the calculated "t" is 4.03, higher than tabular "t", $P < 0.01$, which proves that the differences between the tests are significant, in favor of the experimental group.

Statistically analyzing the differences between the final tests of the two groups, we notice that the calculated "t" is 2.12, higher than the tabular "t", $P < 0.05$, which proves that the experimental group obtains better values, essentially decreasing the number of mistakes technical execution. In fact, correcting mistakes in the execution of technical elements and procedures is not other than the improvement of the actual playing technique, and the results recorded in this regard were as conclusive as possible, especially in the athletes of the experimental group.

So, the number of mistakes at the end of the pedagogical experiment was essentially reduced compared to the results initials, a fact demonstrated by the statistical calculations for each individual element and technical procedure.

Conclusions:

The dynamics of the values obtained by the two groups varies between initial and final testing, although the values obtained are close.

In all tests, the values obtained by the experimental group are better, the significance threshold being reached mainly by the experiment group.

The premise from which we started turned out to be true, the weight of the training factors was decisive, thus the experimental group had superior results.

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