Bulletin of the *Transilvania* University of Braşov
Series VIII: Art • Sport • Vol. 4 (53) No. 1 - 2011

EFFECTIVE IMPLEMENTATION OF TRAINING DEVICES FOR LEARNING THE TECHNICAL PROCEDURES IN VOLLEYBALL GAME

V. LARIONESCU[1] A. PĂCURARU[2]

Abstract: *The establishment of technical mistakes in qualitative markers is based on careful observation, prior to their analysis which may reveal irregularities in the educational training process, being necessary means of modern analysis and control like auxiliary devices, cameras or specialized software. Bringing together these means, supplemented by experience of the teacher, leading in one direction, by a objective assessment techniques of playing volleyball. Using helpful devices, "Frame work for the spike "and "Fixed Blockage", we managed a reduction about 30% of technical errors of the students of the experimental group (n=51) compared with control group students (n=52), to the technical procedure: "spike in the direction of momentum" in the game of volleyball.*

Key words: *training devices, volleyball, mistakes, technical procedures.*

1. Introduction

New solutions for technical training of students, adjusted developments regulation, the game of volleyball technique and complementary sciences progress, is part of a continuous line of specialist, concerned by identification and improvement of methods and means of preparation, in line with the increasingly high requirements of society.

In the initial learning of a technical process, the formation of the psycho driving representation is accompanied by significant deviations from the biomechanical model. This is the subject of many professionals in the field of research that seeks to prevent and remove even the most serious deviations which harm by distorting the shape and content of that motile action.

After authors [1, 3, 5, 6, 8, 9] from technical point of view, most important is to eliminate the errors, their causes are complex and varied. Those may be differentiated depending on the action sequences and all are based on subject or subjects as generators of mistakes.

[1]University "Ştefan cel Mare" Suceava, România
[2] University "Dunărea de Jos" Galaţi, România.

Seeking to make a classification of them, according to a given phase (sequencing) techniques (to customize) and then to identify the full implementation, in appropriate condition of game (to generalize). Using video recordings, we identified the main technical mistakes, but more importantly, we ware able to extrapolate the causes who lead in errors production. Such techniques except ignorance and low level of qualities, skills and specific motile skills, one of the reasons we pointed is the subject attitude by A. Dragnea) [2,p.99], attitude qualifies the individual to an internal part of the social word, guiding behavior adapted in technical errors we sought to differentiate real or symbolic presence of it. We associate attitude as an integrative three dimensional structure present at individual, having both a cognitive nature (judgments, beliefs, reasoning, knowledge), affective (feelings) and conativ (action tendencies, motivation, will).

Clearly typology of technical mistakes by the phases of the action is based on an substrate emotional – cognitive, that can not be ignored, according to many experts, including Păcuraru [7, p. 42] them stand at the base of technical errors production in general, table 1:

Typology of technical errors in general Table 1

ERRORS	FREQUENT SITUATIONS
ERRORS ALLOWED BY PERSEVERANCE	- stubborness - wrong attitude; wrong assessment of the effect
ERRORS MATCH	- the transfer of skills between processes - action identical in different game phases
ERRORS CAUSED BY MOODS	- fear of the opponent, competition - desire too much – can lead to blockage - reluctance to competition, indecision - inhibiting the commission of mistakes under pressure
MIXED ERRORS	- including two or more errors committed at the same time

Execution errors are an integral part of learning. Without mistakes, we can not speak of learning, yet we can not relate to any teaching. Because teaching is a complex forms has a substrate action, consciously or unconsciously, the mistake. The process of acquiring knowledge can not be complete without an awareness of mistakes that occur in learning and that initial assessments, intermediary and finals reports bring to light, enhancing the effect of media and explanations, making them complementary and not become single understood the circumstances known to the subject. Everyone knows the phrase "learning from mistakes" even others, so the mistakes highlighted in the collective has a strong role in revealing and stimulating, helping the teacher in disseminating information to the subjects, increasing their interest.

2. Hypothesis

We assumed that the use of training devices in the basic course in sport "Volleyball", will help reduce technical errors in performance by students of the technical procedure "spiking in the direction of momentum".

3. Material-methods

In the first practical lesson in the "Volleyball" basic course both in the control group and the experimental group, we tested the techniques of acquiring the spiking technical procedure, the video recording of

their execution in order to more precisely identify technical errors committed in the process. Executions of the students have shown that this game had not been practiced sport most of them in higher education, however, accomplished the transfer of skills from other sports games such as basketball, handball, soccer, rugby. This transfer of skills not only " dressed" as a positive, certain phases of the techniques of the game of volleyball, being affected as a result of skills typical of other games, such a beating on foot, used for handball, raised serious problems in the stroke attack, the sequence "beating" that must be done on both legs simultaneously, etc.

The more rapidly running error indicated (similar to whistle during the official dispute), leave less room for doubt or incorrect representations by subject. By giving up the middle way and take the binary system assessment (good or bad), provide clear direction to students in preparation. That is why in our opinion the mistake can be an excellent way of learning and progress only if is detected in time and understood by executing and teaching and other subjects. Therefore with reference to the speed of execution of techniques or of sequences within specific processes, we believe that a simple subjective assessment, conducted by specialist eye, or in some cases even the "eye" of the video camera can not compensate for many data, stimulus and critical moments during the methodical approach. Following this, we consider that the introduction of training devices is not only important in the training process, but where possible, the assessment of certain processes or sequences.

Technical errors are generated and insufficient knowledge of biomechanics, from domain specialists that do not require a correct position of the legs when spike, making it impossible to drive a symmetry of the lover limbs, the imbalance of the body in the air phase, since the triple chain extension has not the same values on both sides.

Following the video of executions subjects control group (n=52), both initial testing and final testing, we have seen the most common technical mistakes, being able to identify the most vulnerable stage and accordingly to reduce mistakes in implementing this technique.

Examining the literature, and of ascertaining the experiment assessing group executions students witnessed the initial and final testing, we identified the most common mistakes of execution from the approach "spike in the direction of momentum", just as can be pursued in table no. 2.

Technical errors in "spike in the direction of momentum" procedure Table 2

Phases of the procedure	**Spike in the direction of momentum**		
	Execution errors		
Momentum	Not anticipating the ball trajectory-inappropriate move	Moving arms brake the move or does not act not at all	Without observing the sequence of Steps
Beating	Is done on one foot	Tips of the feet take contact with the ground first	Beating is not done at the ball timely
Arms work	The raising arm is the one attacking	The attacking arm is not stopped and touches the net	The arm is not bent at the elbow or is bent too much
Spiking the ball	The palm is contracted with stuck tight fingers	With the tips of the fingers or with the forearms	The ball is not hit in the upper side of the anterior callote
Landing	Besides in the other field	On the heel or one foot out	The distance is greater than 30 cm. from the place of battle

The elements in the game of volleyball are closely interrelated in action process so that if the other sports games we can speak of a loss such as dribbling the ball, followed by a recovery phase and continue of playing, in our case, any wrong control of the ball conducing to lose point annihilating all subsequent actions. The main goal of the game of volleyball in opinion of A. Păcuraru, [7, p.73], is that players of a team managed to send the ball over the net in adverse playing field so that opponents can no longer return. To achieve this goal, taking into account the above conditions, the principal means to do this is spiking procedure. Although the technical element can be divided into several processes, each with advantages and disadvantages, we stopped in this study techniques "spiking in the direction of momentum, the most accessible of them, while remaining, the far the most difficult procedure of basic course in "Volleyball" discipline. Spiking procedure while being individual action that can get points as a culmination of the amount of other actions realized by the team, the interest of subjects in learning it is the premise of good qualities, creating both the emotional and volitional needs to address it.

Learning spike procedure requires the existence of specific physical and technical qualities, the technical component that is learned after a longer period of time from launch preparation. The instruction also needs to be addressed sequentially, in stages, execution errors are analyzed and corrected simultaneously with the execution of that sequence.

One of the most important phase, which determines the proper and effective implementation of the attack is the momentum hit. He is a part of it and how it is executed directly influences other components, determining their accuracy and effectiveness. Taking into question the mistakes that occur in this learning process, as M. Niculescu and L. Vladu [4, p.53], they can be classified into two categories namely general mistakes that are committed regardless of the procedure performed, or the situation in a particular game and error procedure or time of the stroke attack. Correcting mistakes and guiding students in carrying momentum can be made by chalk marks on the ground, use of boundary lines of land as visual cues, attempting a piecemeal approach, the first stage proceedings legs, which then we will double the action arms.

In order to achieve a timely movement to the ball and steps and then matching pace of implementation, we used the device helper "framework for attack", figure 1., device that provides an approximation of the execution of purpose followed, guiding the subject in the recurrence with the object at the desired height, the ball sitting at the optimal point for hit.

Fig. 1. *Auxiliary device "framework for attack"*

The above mentioned device has a dual mission: to regulate the movement and determining the place of battle depending on the ball, which pose challenges for practitioners and made the correction phase of flight movements, as the action arms and hitting the ball, which had a significant role in stage of initiation - fixing. We insist on observing mistakes and correcting them early so that incorrect driving skills, be more easily corrected, before being stabilized in the motile memory of the subject.

Observing that most technical errors, after attending the basic course by the students of the control group, sequences are grouped around phases: ”action arms” and ”hitting the ball”, we headed out to those two phases, focused on increasing the working time the specific means, under easy conditions such as hitting the ball with the palm relieved – of seated or standing for fist training, hitting the ball from the device helper “framework for the attack” came down, the subject being on the ground for a target of attention to this stage, successive ball hits to the floor at angle of 45”, the wall repelling the ball, executing the momentum and throwing a tennis ball over the net in the first half of the land. Once completed those exercises have insisted on repeating in various conditions as close to full implementation, and hitting balls in a given direction with the target of some immobile objects and then some mobile objects passing in the execution of two at the third pass of the attack with the feet on the ground to a partner, then run attack shot over the net, the subject sitting on the gymnastics trunk, for consideration as best past path of the trajectory of the ball. When we found no technical deficiencies during and after the execution of these exercises, we went to the execution of the attack shot over the net, the ball thrown in the first phase, then passed, the net height is initially lower. The exercises were carried out front and in pairs, the errors correction is performed individually, equivalent to the previous warnings covering the entire group, stopping when the case, executions for appropriate signs, front, drawing all the attention to the distortion technique. Working on this equipment has helped to form a mental representation of the whole approach necessary 10 to 15% of total work volume in this process, aiming in particular to correct technical errors, the device maintaining the ball in the optimal hitting place, and assemble all components in the full performances.

In the consolidation phase we introduced in preparing students another device fixed as shown in figure 2, which aims to build capacity to bypass striker blocking players from being used initially to understand the areas where the ball must be attacked. Working on this device, especially as the item has not yet mastered the technical blockage, can substitute the action of subjects learning strike attack and preparing learning technical procedure, “individual blockage at correspondent” being used by the subjects until they replaced, with this learning procedure, the device being provided with a mobile section located in the center, witch attacker can send the ball, like in game situations.

Fig. 2. *Auxiliary device ''Fixed Blockage''*

Analyzing the values obtained from both groups at final testing process „spiking in the direction of momentum" we can see that the control group made an average of (x = 2.81) errors of execution as opposed to the experimental group which received only (x=1.84), the difference of 0.97 for control group, confirming that the experimental group made significant progress. Thus reducing technical errors from 146 to 94 supports the stated above, the phases of the process where they made the most progress was "hitting the ball" and "landing" where the control group totaled 63 errors, unlike the experimental group who totaled 35, with 44% less. These numbers reinforce the belief, that using the training devices: "frame for the attack" and "fixed blockage" in the preparation techniques "spiking in the direction of momentum" by the experimental group, we have produced significant changes in terms of assimilation to a higher quality level of this technical procedure by reducing technical errors, as can be seen in figure 3:

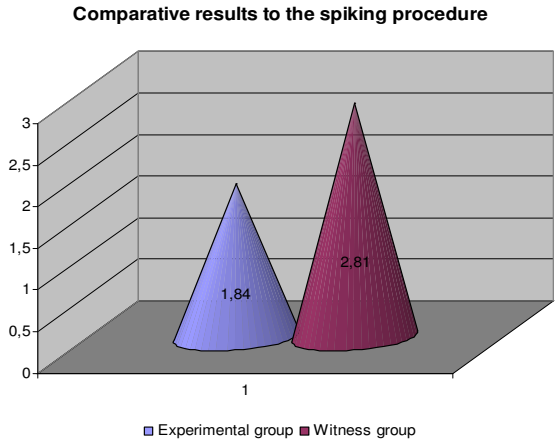

Fig. 3**.** *The results of average mistakes in final testing techniques "Spiking in the direction of momentum" in t game of volleyball to the control group (n=52) and experimental (n=51)*

The threshold reached: $p < 0,05$ from Fisher's table, corresponds to $t = 2,37$ between final tests of the two groups in this process, which shows a significant difference in average errors, with a successful outcome experimental group as shown in Table 3.

The training devices enable immediate evaluation and self-evaluation, in the actual execution, requiring an immediate response from subject, creating a feedback framework between subject, device and teacher.

Using helpful devices should be reasonably respecting motile learning stages, to have a good efficiency.

Table 3

Comparative result from two tests of the technique of execution of the process "Spiking in the direction of momentum" between the control group (n=52) and experimental group (n=51)

SPIKING IN THE DIRECTION OF MOMENTUM									
X				σ				t	
E		W		E		W		E/W	
I.T.	F.T.	I.T.	F.T.	I.T.	F.T.	I.T.	F.T.	I.T.	F.T.
8,57	1,84	8,58	2,81	2,41	2,12	2,23	2	0,02	2,37

Legend:
I.T. = Initial testing;
F.T. = Final testing; **E**– experiment group;
W–witness group; $\bar{x}$ **=** arithmetic average;
σ =standard deviation; **t** – Student test.

We consider as a mistake the methodical approach in terms of tactical processes within lessons, exercises like sending the ball in adverse land on mattresses, or other landmarks by spiking the ball, though very effective, finding applicability in the game, are wrong from methodical and pedagogical point of view, because we believe that students guided, unconsciously, by the famous phrase "the goal justify the means", subject seeking the ball over the net (still not yet the case) damaging the technique. Failures (also understandable) increase the distrust in the performer's mind, adding a feeling of frustration with serious consequences in attitude toward discipline. These approaches have their place in lessons at the end of basic course, when we can speak of stable technique for implementing and strengthening the linkages time for various conditions.

4. Conclusions

Using training devices in preparing the students to "Volleyball" basic course, contribute to finding the important moments of the technical procedure, promoting the continuous report of student execution with final model of this technical procedure and with the executions of the other students, being a motivational approach in the line training. Also working on training devices corrects and prevents mistakes that have been installed in the technical execution of processes, thus avoiding the formation of bad habits that need long time to restore the dynamic stereotype.

The introduction of helpful devices in technical training of the students, promote understanding simple and complex movements of the sequences, stating the main link and execution errors that occur in the implementation techniques, streaming the maximum density ratio lesson.

Integrating the training devices in the actions systems can be operated in one outstretched as educator and the educated ones, if a route is put into precise methodology for each stage of learning process, supplemented by exercises with and without the ball, individual or in pairs and adapted to the subjects particularities and possibilities.

References

1. Croitoru, D., Şerban, M.: *Volei în şcoală.* Bucureşti. „Semne ’94”, 2002, 122 p.
2. Niculescu, M., Vladu, L.: *Volei de la A la Z.* Piteşti. Editura Universităţii din Piteşti, 2005, p. 24 – 59.
3. Niculescu, I.: *Volei.* Craiova. Universitaria, 2006, 120 p.
4. Niculescu, M. and others. *Volei sub formă de întrebări şi răspunsuri*. Craiova. Universitaria, 2008, 188 p.
5. Păcuraru, A.: *Volei, tehnică şi tactică*. Galaţi. Editura Fundaţiei Universitare „Dunărea de jos” Galaţi, 2002, 183 p.