

Science, Movement and Health, Vol. XVIII, ISSUE 2 Supplement, 2018
September 2018, 18 (2 supplement): 284 - 289
Original article

MODELING THE TRAINING IN THE VOLLEY GAME, BY SOFTWARE PROGRAMS

COJOCARU ADIN-MARIAN¹, COJOCARU MARILENA¹

Abstract

Problem: The electronic computer or computer has become an indispensable and extremely efficient and convenient tool for those who work in great performance due to their high ability to record and store information and, especially, processing capabilities, extremely fast and from countless points of view.

Purpose: With a more sophisticated "soft", values of individual behaviors can be recorded and can be calculated for each exercise used in the training, the number of ballots, the number of balls actions, successes and mistakes, by calculating some indices efficiency of actions.

The premises of the study: In this paper we start from the idea of trying to concentrate as many ways of evaluating the training and contest in the volleyball game. We also want to achieve a systematization of assessment tools so that we can support teachers and coaches working in the field.

Methods of research. As a working method I used:

- bibliographic documentation;
- interpretation of statistical and mathematical method;
- graphical representation method.

Discussions: In the current practice, there is no match, without the opponents, not to study with each other, with a great deal of detail, from a tactical point of view. Tactical game plans are thoroughly prepared, applied and seriously analyzed.

Conclusions: The mathematical optimization of the evaluation of tactical action in volleyball play may be the starting point for accurate and accurate interpretation of the value of the action. The use of multimedia tools in the preparation of a volleyball team is a starting point for the realization of a vision-calculator configuration by designing, selecting and checking the tools and working methodology.

Key words: training, competition, preparation, volleyball, software.

Introduction

The electronic computer or computer has become an indispensable and extremely efficient and convenient tool for those who work in great performance due to their high capacity to record and store information and, especially, processing capabilities, extremely fast and from countless points of view.

With a more sophisticated "soft", values of individual behaviors can be recorded and can be calculated for each exercise used in the training, the number of ballots, the number of ballless actions, successes and mistakes, by calculating some indices efficiency of actions.

The assessment may include both a qualitative and a quantitative description and value judgments about the desirability (Doron & Parot, 1999).

Computer assisted assessment has become an

integral part of this process. Recent technological advances have allowed the observation of subjective improvement coaches and sports teams to compensate for such biases and errors inherent to the human system information.

The last decades of the century saw a great expansion of sports performance, actual results are possible by using the advanced techniques of investigation of various aspects of the field (Komor, A., 1984). Given that, based on human physical performance lies movement, people have been tempted since ancient times, to study in detail, with the aim of knowing the finest mechanisms to increase the output and hence the physical performance.

In volleyball, performance analysis can be observed under several points of view: somatic, driving, technical and tactical actions of individual and collective energy, psychological ways. They used

¹Faculty of Physical education and Sport, *Spiru Haret* University, Bucharest, Romania,

Email: adincojocaru@yahoo.com

* the abstract was published in the 18th I.S.C. "Perspectives in Physical Education and Sport" - Ovidius University of Constanta, May 17-19, 2018, Romania

Received 2 march 2018 / Accepted 3 may 2018

different strategies coach long observation of these issues, even before the Inauguration and democratization computer (Eloi, S., Laborie, P., Schmit, J.M., 1998).

The video provides both the teacher and the pupils the opportunity to examine the important elements of the movement at a lower speed than the real one, thus offering the opportunity to increase the ability to understand and study certain aspects of the depth of the movement.

It also offers the possibility to use video recordings as a way of evaluating athletes' performances that aim to increase the feedback provided by the teacher to improve athletes' performance (Castelli, D, 2005, p. 6).

Informatics brings speed, ease of purchase and possibilities of automated processing of information gathered. Postulate such observable behavior analysis methods is the following: measures of performance objectives should serve as a basis to analyze the game and driving condition. This approach could thus be reduced to a planning process training or teaching.

Premises study

In this paper we start from the idea of trying to focus as many ways to assess the training and competition in the game of volleyball.

Also we want to achieve a systematic means of assessment, so that we can assist teachers and trainers working in the field.

Hypotheses research

Objectification content evaluation design should lead to increased performance by:

- index training (planned and actual) in dynamic factors training (planned and realized);

- dynamic intensity and volume (planned and realized);
- dynamic loading (planned and realized);
- ergogenesis effort.

Methods of work

Index training plays an important role in the training process of objectification. Unit calculation (M.Șerban, 1998 and 1999) is assessed as a percentage, where $10^\circ = 5\%$ (p_i). Dividing the components of training is next:

- the duration in minutes of a workout lessons in 120° converted into percentages, has a weight assigned to be = 0;

over 120° have $f_i = 1$;

- warm, added to the physical training has $f_i = 0,20$;
- technical and tactical training individual has $f_i = 0,40$;
- technical and tactical training collective has $f_i = 0,60$;
- game has $f_i = 0,80$.

Methods of research

- Information recording method;
- Interpretation of statistical and mathematical method;
- Graphical representation method;

Value of the training is calculated using the following formula:

$$F_{ia} = \frac{\sum_{i=1}^n p_i \times f_i}{\sum_{i=1}^n p_i} \text{ if we have a bit of}$$

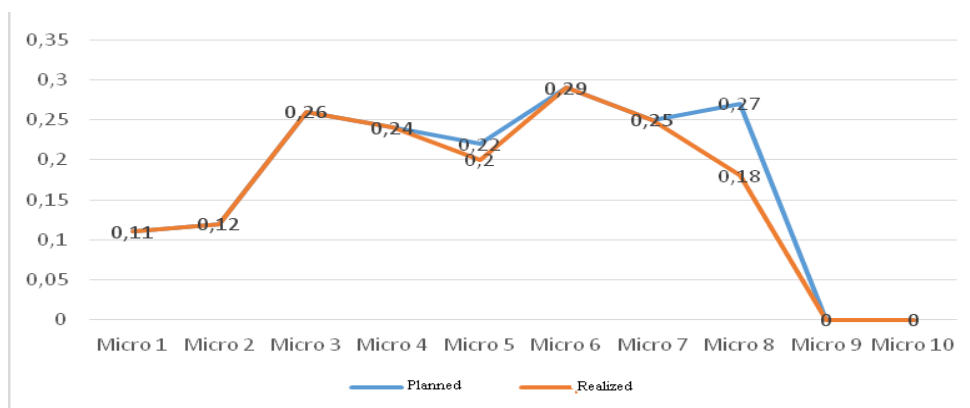
coaching, which has the following structure:

Table 1. A training lesson, which has the following structure

warm.20`	Preparation technical and tactical. Individual. 30`	Preparation technical and tactical. Collective. 20`	Game 30`	Total 100`
$F_{ia} = \frac{10\% \times 0 + 10\% \times 0,20 + 15\% \times 0,40 + 10\% \times 0,60 + 15\% \times 0,80 + 0\% \times 1}{100} = 0,26$				

Table 2. A training lesson, which has the following structure

warm.30`	Preparation technical and tactical. Individual 60`	physical preparation. 60`	Total 150`
$F_{ia} = \frac{0\% \times 1 + (15\% + 30\%) \times 0,20 + 30\% \times 0,40}{100} = 0,21$			

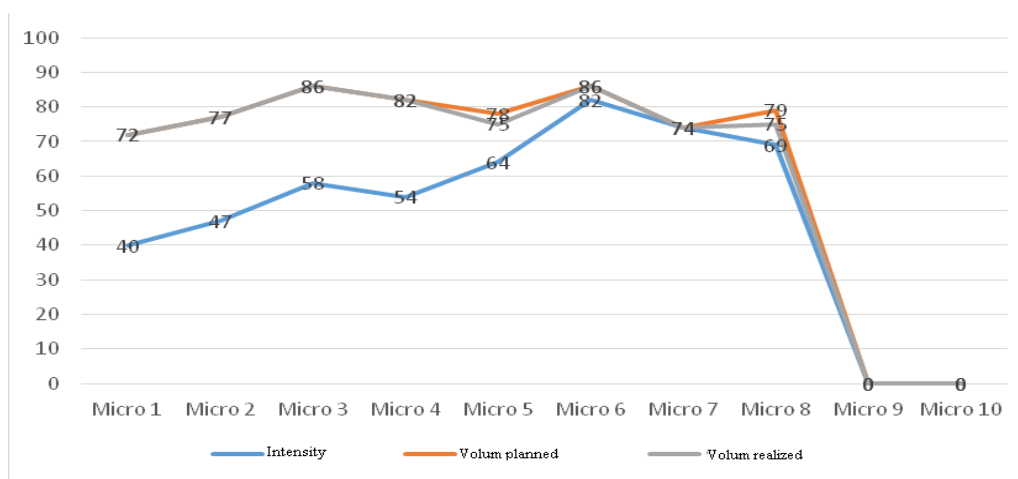


Grafic 1- Index of training in over a period of preparing 8 microcycles

Assessment of intensity and volume within micro cycle workout is estimated as follows:

- *intensity quantified on three levels:* aerobic effort 40% effort and 70% lactacid anaerobic

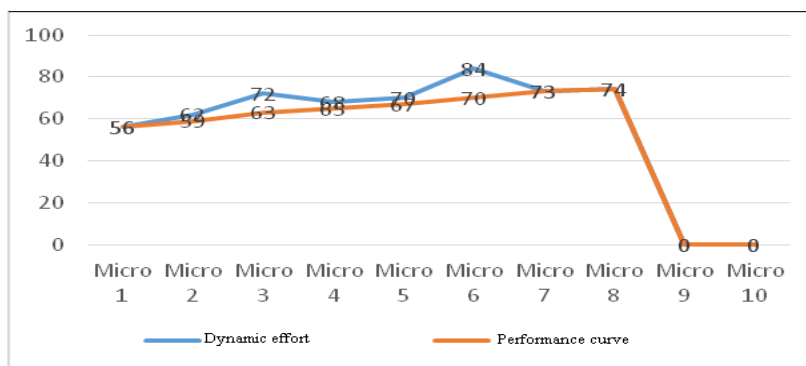
anaerobic effort alactacid 90%; strength training each lesson are added together, the arithmetic mean and the resulting value microciclu figures and the curve has an upward trend.



Grafic 2- Dynamics of the volume and intensity of training over a period of 8 microcycles

- *Load (training task)* is calculated as the arithmetic mean of the average of the volume and

intensity of microcycle. Grading curve evolving wave while loading performance improves linearly.



Grafic 3- Dynamic effort and sport performance curve

Match report

Match report is a summary analysis that generates fundamental statistical match for both teams split the players.

Presentation evaluation notes, symbols, codes composed of combinations of attack, the player

lifter call center, land areas and symbols volleyball program effectiveness DATA (Data Project 2007) we present below:

Table 3 - Notes represented by symbols rating for each share of players.

	Note evaluation					
	=	/	-	!	+	#
Service	0	8	4	0	7	10
Reception	-3	-3	-1	0	7	10
Atack	0	0	5	0	5	10
Block	0	0	0	0	0	10
Digger	0	0	0	0	0	10
Setter	0	0	0	0	7	10
Free ball	0	0	0	0	0	10

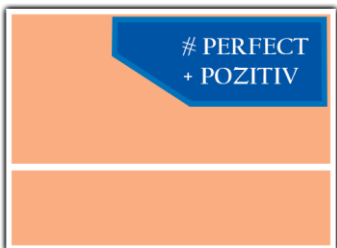

Formula for calculating these measures is:

$$X = \frac{(A=) + (A/) + (A-) + (A!) + (A+) + (A\#)}{TA}$$

A = numbers of action

TA = The total of actions

Table 4. Evaluation standard the reception at different parameters:

<p>Reception by setter relationship with the playing field</p> 	<p>Reception according to the height of setter performing pass</p> 
--	---

Discussions

The rating is based on any training or competition. A coach will be even more efficient with how his remarks will be more relevant. Observer's eye and "paper-pencil" today plus more sophisticated means allowing observation of their own team and the opposing team and assessment of the opposition (Gâtej, M. 2011).

This beam is principles for collecting information but it is known that this collection it also depends on the philosophy of the coach.

Time total improvisation is not valid. The growing complexity of the game requires you know the more thorough the game opponent. The complex system of competition (whatever its level) observation play an increasingly predominant. In observing the international system is applied to all age groups.

By observing the resulting team strategies it uses mainly, and also collected data allow the establishment of a database on the actions of players into the box. These data are stored, compiled and used when the own team need to meet the team observed. In these circumstances the game plan is safe operation, to the extent that it is based on numerous data (Bompa, T.2003).

Recording, sorting and comparing team-level rankings, national and international balances, established hierarchies, along with other direct or indirect information, can provide the necessary objective data in shaping a possible model of optimal competition. This optimal model should follow the performance indicators, the gaming actions to be achieved by the team in that competition.

The efficiency of gambling is recorded, only under competitive conditions, by executive structures, which express the functional loop of the volleyball game.

The most pertinent information is the one that characterizes the potential of the players before the competition, depending on this potential, the coach finishes the basic sextet, which comes into play, programming its eventual changes of players, which, to them allowing for a favorable result for his own team.

Conclusions

From all this it appears that a key component of sports performance is evaluation and observation.

Set of reasons that justify the use of assessment tools at all levels of practice is classically divided into two major categories: assessment and evaluation in competition sports training.

The current level of playing volleyball is appreciated, performance level, using statistical and mathematical methods for calculating the effectiveness of technical and tactical game and training.

Using program evaluation is necessary because allows us to obtain information about their own team and the opposing team.

Using data analysis programs are extremely important for the coach shall provide a means to control its activity both for programming and for in-depth assessment conducted training or competition.

Using information gained from observing the game are indispensable factors to achieve performance.

Mathematical optimization evaluation of technical and tactical action game of volleyball can be the starting point for correct interpretation and precise share value of the game. Efficiency values obtained in the game, optimized mathematical underlying model validation training, which is essential in the preparation, analysis and modeling training. The coach has relevant information needed to conduct the game.

Literature data show that high performance teams use these synthetic forms of objectification in different ways.

Using assessment programs are a necessity, their use allows for information required composition training models;

Using multimedia, presenting driving tasks, using video, using image analysis on the performance of their own movements (autoscopy), can help to achieve a better feed-back, better awareness of the game load, and a clearer representation of the movement to be acquired, to the increase of motivation, which in the end can lead to the optimization of the learning of the technical procedures.

Analysis of the execution technique is based, as a rule, on the video recording of the execution. The simplest and cheapest method is the qualitative analysis in which the coach and the athlete, together, view the images and decide on how to approach, improve the technique.

Use of software acquisition and data analysis are extremely important because they make available to coach a means to control its activity both for programming and for thorough evaluation of training or competition conducted.

Acknowledgments

No funding was used for this study.



References

- Bompa T., 2003, Totul despre pregătirea tinerilor campioni, Editura EX PONO, București, p 58-61.
- Castelli, D., 2005, Technology integration: Virtually possible, Teaching elementary physical education, Human Kinetics, p. 6
- Doron, R., Parot, Fr., 2006, Dicționar de psihologie (trad.), București, Humanitas.
- Eloi, S., Laborie, P., Schmit, J.M., 1998, L'observation en volley-ball – Analyse du jeu et statistiques, Paris, Fédération Française de Volley-Ball
- Data project, 2007, Data Volley and Data Video HandBook, Bologna.
- Gătej, M., 2011, Măsurare-Evaluare-Planificare. Aplicație în volei, Editura „Universitaria”, Craiova.
- Komor, A., 1984, Modele matematice ale tehnicii sportive, C.C.P.S., Scuola dello Sport, București,
- Serban, H.M., 1999, Gândirea factor de optimizarea a modelarii, Editura Printech.