

MODEL FEATURES AS THE BASIS OF PREPARATION OF BOXERS INDIVIDUALIZATION PRINCIPAL LEVEL (ELITE)

Pavelec O.J., Ostyanov V.N., Maydanyuk O.V.

State Service for Youth and Sports of Ukraine

State Scientific-Research Institute of Physical Culture and Sports

Annotation. *Purpose* - to improve the system of training boxers of higher categories (elite). Individualization of the training process using the model characteristics special physical preparedness. *Materials:* The study was conducted during 2000-2010. Participated boxers national team of Ukraine in the amount of 43 people. Of those honored masters of sport - 6, masters of sports of international class - 16, masters of sports - 21. The average age of the athletes - 23.5 years. *Results:* justified and features a specially designed model of physical fitness boxing class. It is established that the boxers middle weight classes (64 - 75 kg) have an advantage over other boxers weight categories (light and after a hard) in the development of speed and strength endurance. The presented model characteristics can guide the professional fitness boxing (elite), as representatives of the sport. *Conclusions:* It is established that the structure of the special physical training boxers depends on many components, such as weight category, tactical fighter role, skill level, stage of preparation.

Keywords: model, characteristics, physical training, individualization, competitive activity.

Introduction

Modeling has entered in theory and practice of sports relatively recently, though in not quite definite forms. By the present time there have appeared rather many works dealing with creation of models of historical and many years' dynamics of sport results (V.I. Balandin, 1989; I.P. Degtiariov, 1983; L.P. Matveyev, 1972; V.I. Shaposhnikova, 1984; Ts. Zhelezniakov, 1981). There were created model characteristics of the strongest sportsmen and preparedness levels of sportsmen of different qualification (V.B. Popov, 1988; B.N. Shustin, 1995; A.P. Strizhak, 1992), of training process's fragments (A.V. Gaskov, 1999; L.P. Matveyev, 1999; V.N. Platonov, 1997; V.N. Seluyanov, 1998, M.P. Shestakov, 1998).

Practice of models' using in boxers' training process points at need in differentiation of training loads (G.I. Mokeyev, Yu.B. Viktorov, 1983), development of individual-typological specificities (V.Ya. Rusanov, 1985), studying of psycho-physiological functions' peculiarities (Yu.M. Bludov, V.A. Plakhtiyenko, V.S. Sokolov, 1981) et al.

A.A. Novikov, V.V. Kuznetsov (1975) note that in creation of models of the strongest sportsmen significant assistance can be rendered by complex of indicators of psycho-physiological, psychological and bio-mechanical tests, which should be realized as per requirements of technical-tactic physical condition's level. Authors mark out three levels of strongest sportsman's model:

- At first level – characteristics of strongest sportsmen's activity (**competition model**).
- At second level – characteristics of special physical and technical-tactic preparedness (**model of special preparedness**).
- At third level – characteristics of functional level, morphological attributes (**model of functional preparedness**).

In theoretical aspect the presented schema can be successfully used under conditions of complete filling of schema's "cells". But particular tasks of many researches and their fragmentary character often do not make it possible to completely fill all the "cells".

Realization of principle of individualization in such specific activity as boxing implies correction of training process considering specificities of technical-tactic and special boxer's qualities. Complexity of control is also in the fact that it is impossible to directly influence on changing of sport results. Actually coach controls only actions (behavior) of sportsman: he gives him certain program of exercises (load) and makes him to execute them correctly.

For coach and sportsmen model characteristics can be bench-marks of preparedness level and technical-tactic sportsmanship, which must be achieved by the end of training stage. Mean testing results are compared with model characteristics and, thus, boxers' level is evaluated. Successful control is possible only if there are feedbacks, permitting to determine object's state; in particular to compare actual state of object with "model", (programmed).

In our further researches we mark out the following model characteristics of boxers:

- Models of elite boxers, as representatives of this kind of sports;
- Models of boxers' readiness in pre-competition period;
- Boxers' models at basic stage of training;
- Boxers' models, depending on their qualification (MS, CMS);
- Models of general and special physical preparedness.

In this work only models of highest grades' boxers – representatives of kind of sports- are presented.

The research was carried out in the frames of scientific topic 2012.2 “Control of functional state and metabolism of qualified sportsmen in Olympic cycle of training”, which was approved by Order of Ministry of education and science, youth and sports of Ukraine № 1241 dt. 28. 10. 2011.

Purpose, tasks of the work, material and methods

The purpose of the work is improvement of elite boxers’ training system; individualization of training process with using of model characteristics of special preparedness.

The methods and organization of the research:

1. Analysis of scientific-research literature;
2. Pedagogical observations and analysis of competition activity;
3. Timing – dynamometry;
4. Mathematical statistics.

Parameters, which characterize model characteristics, shall meet requirement of information content and reliability of testing.

Information content of testing is degree of accuracy, with which it measures properties, for evaluation of which it is used. Reliability of tests – is level of results’ coincidence with repeated testing of one at the same people in the same conditions.

In earlier researches (V.N. Osyanov et al., 1985) there were determined indicators of boxers’ special physical preparedness in respect to criteria of boxers’ technical-tactic sportsmanship (see table 1).

Table 1

List of laboratory methodic, informative in respect to technical-tactic sportsmanship tests

| № | Description of test of technical-tactic sportsmanship | Symbols of laboratory methodic |
|----|---|---------------------------------|
| 1. | Defense effectiveness | Q ₁₀ , N, PA |
| 2. | Quantity of parried punches | TSR, PA |
| 3. | Quantity of scores in fight | TT-50, Q ₁₀ , PA |
| 4. | Quantity of failed punches | F ₁₀ , TT10 |
| 5. | Quantity of successful punches | TT-50, Q ₁₀ , PA |
| 6. | Effectiveness of attack | Q ₂₀ |
| 7. | Activity of fight | TCR, Q-50, Q ₁₀ , PA |
| 8. | Missed punches | TT-10, PA |
| 9. | Fight effectiveness | Q ₁₀ , N, SC, TT-1 |

Q₁₀ – quantity of punches in test « 10 s », Q₂₀ – quantity of punches in test « 20 s », F₁₀ – total power of punches in test « 10 s », F₂₀ – total power of punches in test « 20 s », TT-50 – total time of execution of 50 punches at distance of 50 cm, TT-10 – total time of execution of 10 punches at distance of 50 cm, TT-1 – time of 1 punch execution at distance of 50 cm, TSR – time of simple response, TCR – time of complex response, SC – spurt coefficient of specialized test, PA – punch accuracy, N – punches power.

Indicators of competition activity, such as: quantity of successful punches in the process of fight; effectiveness of attack; effectiveness of defense; activity of fight and etc. were accepted as criteria of technical-tactic boxers’ preparedness.

As indicators of special physical preparedness the following was accepted: quantity and power of punches in tests “10 seconds” and “20 seconds”; time of execution of 10 and 50 punches at distance of 50 cm; time of response (simple and complex); accuracy of punches, power of punches.

Control of special preparedness was carried out with the help of timing-dynamometry method. Further, this method was improved. For creation of the mentioned models we used indicators, informative in respect to criterias of boxers’ technical-tactic sportsmanship, registered in competition fight.

Organization of the research

The research was conducted during 2000-2010 with participation of boxers of combined national team of Ukraine – 43 persons. From them: 6 – honored masters of sports; 16 international masters of sports; 21 – masters of sports. Average age of sportsmen was 23.5 years.

For determination of special physical preparedness level we applied method of timing-dynamometry on base of timing dynamometer ПІФ-2 with using of computer program for registration of parameters of boxers’ punching actions. In particular, there were registered: power, time and quantitative characteristics of direct double-punch combinations; quantitative and power indicators as well as power of specialized tests “8 s” and “40 s”; power of one punch, mean power of punches (in conv. units) and so on.

There were calculated the following statistical parameters: mean arithmetic (X), dispersion (G), error of mean (m), coefficient of pair correlation (r).

In the present research there are presented model characteristics of elite boxers, as representatives of kind of sports. All tested sportsmen were divided into three weigh groups: light categories 49-60 kg; middle categories – 64-75 kg; heavy categories – 81-91 kg.

Results of the researches

Analysis of research's results showed that boxers of middle weight category (64-75 kg) have advantage over boxers of other weight categories (light and heavy) in development of quickness and power endurance (see table 2).

Analysis of boxers' power of punches in tests "8 s" and direct double punch combination (characterizing explosive power) showed its gradual increasing with increasing of sportsmen's weight. Also attention is attracted by the fact that quantity of punches of light and middle weight boxers in test "8 s" is nearly the same 56.8 ± 1.10 and 56.93 ± 0.63 , accordingly.

In test «40 s» indicators of punches' quantity (characterizing special speed endurance) of middle weight boxers are confidently higher than the same indicators of light weight boxers 234.8 ± 2.06 against 241.25 ± 2.16 of punches accordingly. Average power of one punch in test "40 s", which characterize special endurance, practically does not differ from the same indicators of heavy weight boxers: 50.20 ± 1.66 and 50.81 ± 1.08 conv.un. accordingly.

Analysis of results of special physical preparedness' testing showed that for n middle weight boxers high level of punch actions' power is characteristic in test «40 s». It is known that this indicators characterizes level of glycolytic mechanism of sportsman organism's energy supply. Middle weight boxers have advantage, comparing with light and heavy weight boxers.

Table 2

Model characteristics of special physical and technical preparedness

| Indicators of specialized test | | 48 – 60 kg | 64 – 75 kg | 81 - +91 kg |
|---|-------------------------------------|-------------------|-------------------|-------------------|
| "8 second" | Quantity of punches | 56.80 ± 1.10 | 56.93 ± 0.63 | 53.62 ± 0.43 |
| | Average power of punches (conv.un.) | 51.34 ± 1.54 | 67.72 ± 1.80 | 80.89 ± 1.35 |
| | Power of punches (conv.un.) | 356.68 ± 7.55 | 484.32 ± 9.70 | 531.28 ± 7.98 |
| «40 seconds» | Quantity of punches | 234.78 ± 2.06 | 241.25 ± 2.16 | 226.37 ± 1.61 |
| | Average power of punches (conv.un.) | 40.64 ± 1.14 | 50.20 ± 1.66 | 50.81 ± 1.08 |
| | Power of punches (conv.un.) | 236.85 ± 6.20 | 306.13 ± 8.95 | 280.19 ± 6.73 |
| Correlation of punches' quantity in tests «8» and «40» seconds | | 15.70 ± 0.87 | 15.66 ± 1.59 | 15.51 ± 1.16 |
| Correlation of punches' power in tests «8» and «40» seconds | | 19.58 ± 2.46 | 18.86 ± 3.49 | 33.11 ± 2.79 |
| Power of first punch in direct double punch combination, conv.un. | | 58.61 ± 2.33 | 76.22 ± 4.02 | 77.11 ± 3.65 |

Conclusions:

1. System of boxers' training envisages individualization of training process, considering special physical and technical-tactic features of boxers. The presented model characteristics are a "step" on the way to individualization of elite boxers' training.
2. Analysis of theoretical and experimental researches showed that structure of boxers' special physical preparedness depends on many components, such as: weight category, tactic role of a boxer, qualification level, stage of training. It has been stated that middle weight boxers (64-75 kg) have advantage over boxers of other weight categories (light and heavy) in development of quickness and power endurance.
3. The presented model characteristics can serve as bench mark of elite boxers' professional adequacy, as representative of kind of sports.
4. The prospects of further researches imply development of model characteristics of elite boxers at pre-competition and basic stages of training.

References:

1. Gas'kov A.V., Kuz'min V.A. *Fiziceskoe vospitanie studentov tvorcheskih special'nostej* [Physical Education of the Students of Creative Profession], 2008, vol.2, pp. 3-7.
2. Degtiarev I.P. *Trenirovannost' bokserov* [Trained of boxers], Kiev, Health, 1985, 139 p.
3. Degtiarev I.P. *Upravlenie pedsorevnovatel'nym i poslesorevnovatel'nym sostoianiem v vidakh edinoborstv, imeiushchikh delenie na vesovye kategorii* [Management by a pre-competition and after by a competition consisting of types of single combats, having dividing by gravimetric categories], Dokt. Diss., Moscow, 1987, pp. 52 p.
4. Kuz'min V.A., Shiriaev A.G. *Voprosy mnogoletnej podgotovki bokserov* [Questions of the long-term training of boxers], Moscow – Krasnoyarsk, 1999, 126 p.

5. Majdaniuk O.V., Ost'ianov V. N. *Kontrol' special'noyi fizichnoyi pidgotovlenosti kvalifikovanih bokseriv* [Control of the special physical preparedness of skilled boxers], Kiev, 2012, 22 p.
6. Mokeev G.I., Shiriaev A.G. *Teoriia i praktika fizicheskoi kul'tury* [Theory and practice of physical culture], 1999, vol.4, pp. 29 – 32
7. Nikiforov Iu.B. *Effektivnost' trenirovki bokserov* [Efficiency of training of boxers], Moscow, Physical Culture and Sport, 1987, 188 p.
8. Ost'ianov V.N., Golomazov S.V., Cherepovskij E.N. *Teoriia i praktika fizicheskoi kul'tury* [Theory and practice of physical culture], 1985, vol.12, pp. 11-13.
9. Ost'ianov V.N. *Obuchenie i trenirovka bokserov* [Teaching and training of boxers], Kiev, Olympic Literature, 2011, 268 p.
10. Pavelec' O.IA., Ost'ianov V.N., Majdaniuk O.V. *Aktual'ni problemi fizichnoyi kul'turi i sportu* [Issues of the day of physical culture and sport], 2012, vol.26(1), pp. 21 – 28.

Information about the authors:

Pavelec O.J.: ostyan@ukr.net; State Service for Youth and Sports of Ukraine; Esplanadna Str. 42, 01601, Kiev, Ukraine

Ostyanov V.N.: ostyan@ukr.net; State Service for Youth and Sports of Ukraine; Esplanadna Str. 42, 01601, Kiev, Ukraine

Maydanyuk O.V.: ostyan@ukr.net; State Scientific-Research Institute of Physical Culture and Sports; Fizkultury str. 1, Kiev, 03680, Ukraine.

Cite this article as: Pavelec O.J., Ostyanov V.N., Maydanyuk O.V. Model features as the basis of preparation of boxers individualization principal level (elite). *Pedagogics, psychology, medical-biological problems of physical training and sports*, 2013, vol.10, pp. 52-55. doi:10.6084/m9.figshare.775329

The electronic version of this article is the complete one and can be found online at: <http://www.sportpedagogy.org.ua/html/arhive-e.html>

This is an Open Access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited (<http://creativecommons.org/licenses/by/3.0/deed.en>).

Received: 12.07.2013
Published: 30.09.2013