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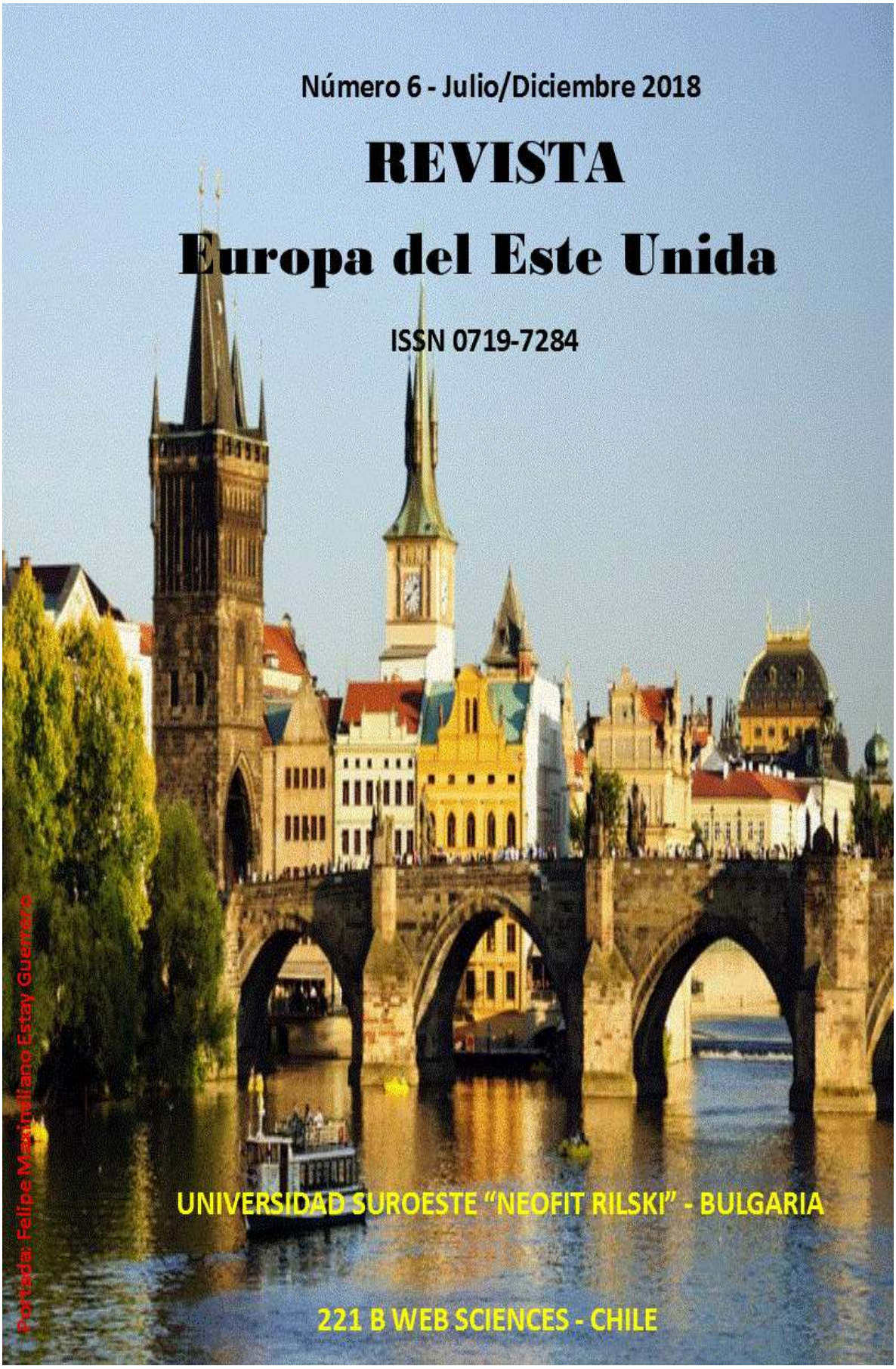

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DIAGNOSTIC AND EVALUATION SYSTEM FOR SELECTION OF 13-15 YEAR BOXERS

SISTEMA DE EVALUACIÓN Y DIAGNÓSTICO SELECCIONANDO BOXEADORES DE 13 A15 AÑOS

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Abstract

This work is focused on the development of modern, science-based, multidimensional diagnostic and evaluation system based on the latest conceptual paradigms in the selection of 13-15-year-old boxers in the Republic of Bulgaria. The creation of such system reflects directly on the quality of sport training process and the achievement of high success in competitions.

Keywords

Sport talent – Amateur boxing – Young athletes – Anthropological indicators – Psychological qualities

Resumen

Este trabajo está centrado en el desarrollo de un sistema de diagnóstico y evaluación moderna, basado sobre los últimos descubrimientos de la ciencia multidimensional y paradigmas conceptuales en la selección de boxeadores de 13 a 15 años en la República de Bulgaria. La creación de un sistema así, refleja directamente en la calidad del proceso de entrenamiento deportivo y el logro de un alto éxito en la competencia.

Palabras Claves

Talento deportivo – Boxeo amateur – Atletas jóvenes – Indicadores antropológicos – Habilidades psicológicas

In the context of modern sports, where it has become a business, carrying huge financial dividends for athletes and coaches, there is a need to rethink and modernize basic concepts related to the achievement of high sport results in the field of amateur boxing.

Developing a science-based system of diagnosis and evaluation in the selection of young boxers (aged 13-15) is a key problem in finding adequate strategies and constructing modern vision of process efficiency that achieves high sporting success. Recently, issues of resource limitation (material, technical, financial, etc.) are discussed as a factor for worsening of the sport results. In this sense, for us it is a priority to find those opportunities that can overcome and compensate for the unfavorable factors in this area.

The focus of the present study is on developing an accessible and easily applicable practice system of leading criteria for the assessment of athletes' prospects in amateur boxing.

From the position of the person-centered approach and the humanist tendencies in modern sports, it is necessary to emphasize another aspect of the boxers` sport training (often disregarded by the researchers). High sports scores are not self-target, but they should always be related to health of adolescents and their full physical and socio-psychological development. It is in this connection not only to fill the sports reserves of our country in the boxing area, but also because of the health concern (physical and mental) of the children and adolescents, we want to bring boxing to their attention as well as the possibilities of selection in this sport. Thus, they will focus on systemic activities, especially those who have the potential to develop and improve in this specific area.

The creation of a modern multidimensional system for diagnosis and evaluation in sports selection directly reflects the quality of the sport training process and the achievement of high success in competitive activity. High sports performance is directly determined by the complexity of the anthropometric, physiological, motor and psychological characteristics of the individual. The discovery of talented children in boxing is a guarantee both for the achievement of high sporting achievements but also for the completion of the sports reserves of our country.

Boxing is one of the oldest combat sports. As a sport, it is part of the group of fighting. One of the most important features of this group is the direct smashing of the opponent. Boxing competitions take place in a very diverse, poorly predictable environment characterized by ever-changing parameters. Depending on their specificity, the combinations imply and require less precision and stability of performance than the variety of actions, improvisation and creative decisions. The behavioral and action regulation aims at providing maximum flexibility and adaptability in the context of the environment.[1]

Boxing as a sport, is characterized by complex, predominantly acyclic propulsion activities in the conditions of a dynamically changing environment of continuous transition from phase attack to phase protection.

[1] Т. Янчева, Личност и състезателна реализация. София: 75-76 (2004).

By nature, it belongs to acyclical sports, those characterized by constant adjustment and continuous movements under changing conditions. This requires rapid coordinated changes in the central nervous system. In the arsenal of sport people there are automated motorized actions in the form of individual skills and physical habits performed in the form of complex coordination. They appear in response to the individual movements of the opponent during the boxing match.

The specificity of boxing, both amateur and professional, is related to extremely high psychophysical loads of athletes.

From a sport-technical point of view, at first glance, boxing does not look so varied, compared to some other types of sport from the group of combats, but it is extremely complicated from a coordinating and conditioning point of view. Attack, defensive and counter-attacking actions are performed in an extremely dynamic environment, which can hardly be predicted in the pre-preparation for boxers' competitions.

Competitors should master and apply a large arsenal of complex dynamic stereotypes on the ring, in the context of an acute conflict with an opponent that actively counters them.[2] The time deficiency in which a strike exchange takes place (the hit with a hand reaches the goal of 2-3 hundredths of a second) shows that in addition to physical qualities, the athlete must also have a specific sports intelligence to realize in the training process and the actual competition.[3]

The development of a scientifically-based system for diagnosis and evaluation in the sports selection of 13-15-year-old boxers has a significant impact on the optimization of the control and management of their sports training and competition activities.

The issue of elucidating the nature and specifics of control in the training process is directly related to the development of the proposed assessment problem in the selection of young boxers (13-15 years of age).

The term "diagnosis" has Greek origin (diagnosis) and means recognizing, identifying something in the context of the relevant field of scientific knowledge.

Modern diagnostics develops methods for revealing and exploring the various aspects of human development. The purpose and function of the diagnostics in the field of sport is to ensure the process of gathering information about the status of athletes, assessing their prospects and reliability. In addition, to objectify their capabilities for sports improvement, the growth of conditioning and coordination capabilities.

The role of the diagnostics in sport is related to the development of methods for revealing and measuring the individual psychological, physical and psychophysiological characteristics of athletes.

Diagnostic activities are focuced on objectivizing the athlete's current state and comparing it with some standards, norms of development and achievements.

[2] Е. Лефтеров, Кикбокс. София, НСА-ПРЕС: 14, 2006.
[3] Е. Лефтеров, Кикбокс…

In that regard, M. Bachvarov argues that the term "diagnosis" means a description of the athlete's condition in accordance with the model of the athlete's achievement. Diagnosis gives an idea of deviations from model characteristics of a certain contingent athlete.[4]

The author stresses that the diagnosis during the various stages of sports training is different. Step-by-step diagnosis characterizes the cumulative effect of training exercises over a period of 1.5-2 months. Current diagnosis reflects the right training process and what deviations in the program and results are in the athlete's condition within 2-3-week cycles.[5]

In recent years, the scientific research in the field of sports science focuses mainly on the objectification of key parameters for exploring various components of motorcycle and revealing their integrative relationships and dependencies.

The quantitative and qualitative analysis of the interaction between the relevant indicators in assessing the physical, psycho-functional, psychological and tactical training of athletes in various sports provides valuable information. This information can be used to optimize sports selection, training programs, and help predicting sporting results.

In its structure, sport control system comprises three subsystems of a lower order: measurement, evaluation and optimization systems. The control system itself is a structuring component in the system of sports training that is of a higher order.

There are close interrelationships between these components of the system for control and management of the sports training process, the objectivity of the measurements and the adequacy of the evaluation parameters contribute to optimizing the overall control activity and its prognostic aspects.

The main function of the evaluation subsystem, according to Zhelyazkov and Dasheva, is to generate information on the current state regarding the main factors of the achievement.[6]

The focus of selection is to find, at a relatively early age athletes who, under the influence of the training process, achieve remarkable success in sport. To achieve this goal, it is necessary to make a comprehensive analysis of the requirements, specificity and characteristics of the motor activity.

Based on these criteria, it is developed a specific diagnosis and assessment of the athlete's individual abilities. Thus, based on multidimensional research of motor skills, anthropometric indicators and psychological qualities are found, and all this is relevant to success in a sport or sport discipline.

From what has been said so far, to be objective and successful selection must include scientifically well-grounded diagnostics and assessment of certain performance-specific indicators based on the baseline data through which it is constructed and applied.

[4] М. Бъчваров, Контролът в подготовката на лекоатлета. С. 1989.
[5] М. Бъчваров, Контролът в подготовката на…
[6] Цв. Желязков, Д. Дашева, Основи на спортната тренировка. София, ГЕРА АРТ (2002), 388.

This way, it can be summed up that success in the martial arts depends on complex abilities - based on the specific requirements of sport. In this regard, it should be noted that the widespread approach of recruitment is inadequate, when the predisposition of being engaged in a sport is assessed solely based on testing condition and coordination capabilities, which are isolated from one another. The mistake of this approach is that through these exercises, motor skills are assessed in isolation from the specificity of the combinations.[7]

The meaning of diagnosis in sports selection is related to the need to test and measure the compliance or inconsistency of the physical and mental characteristics of the athletes with the requirements of the respective type of sporting activity.

One of the most expressive features of diagnostics in sports selection is its complex-integrative nature. The complexity is predetermined by the goals of the sport selection, namely: the athlete's personality, in its entirety and its diversity (anthropometric characteristics, motor skills and psychological features).

The need to diagnose and assess the anthropometric, motor and psychological performance of young boxers (13-15 years of age) is due to the strong influence of the genetic determinants and the fact that they are less determined by the influence of socio-cultural factors of the environment.

Based on the analysis of the numerous studies, in the field of sports selection, it can be assumed that the creation of an objective, up-to-date and scientifically-based system for diagnosis and evaluation in amateur boxing selection reflects on the quality of training process and the achievement of high success in competition.

The focus of our research efforts is on scientific justification and development of a system for diagnosis and assessment of the main components of physical and psychological training in the selection of 13-15-year-old boxers in our country.

Because of the theoretical analysis of the problem it was found that it is necessary to refocus research from the one-dimensional (mainly on anthropometric characteristics) to multidimensional models for detection and recognition of talented children in the field of amateur boxing in the Republic of Bulgaria. It is necessary to develop easily accessible and applicable practice system of objective criteria for assessing the prospects of young boxers. To measure not only anthropometric indicators and motor skills but also leading psychological qualities.

In this connection, a survey of 83 leading specialists and coaches in the field of boxing in the Republic of Bulgaria on the current status, specifics and perspectives for the development of the sports selection of the 13-15-year-old boxers in our country was carried out.

To reach a larger sample of people, an online version of the questionnaire, which contains 23 questions, has been developed. Only one of the questions is completely open,

[7] А. А. Скорина, Врублевский Е.П. Диагностика и развитие двигательных способностей в спортивных единоборствах на этапе начальной подготовки. Вісник Чернігівського національного педагогічного університету. Сер.: Педагогічні науки. Фізичне виховання та спорт. - 2013. - Вип. 112(1). - с. 296-301

all others are related to the group of closed issues, most of them are scaled and enabling respondents to specify the degree of expression of a characteristic. Each of the questions provides an opportunity for further suggestions from respondents.

As a result of the survey, it was found that the respondents had long professional experience, with 20.48% having an experience in this field over 20 years; 18.07% - 18-19 years; 13.25% - 16-17 years old; 12.05% - 14-15 years of experience in boxing (Figure 1).

This data makes it possible to conclude that respondents are aware of the practical dimensions of current issues and challenges in the field of amateur boxing. In this sense, the information received reflects the practitioners' perceptions of the nature and specificity of the diagnosis and evaluation of prospective boxers and their role in the improvement of the training process.

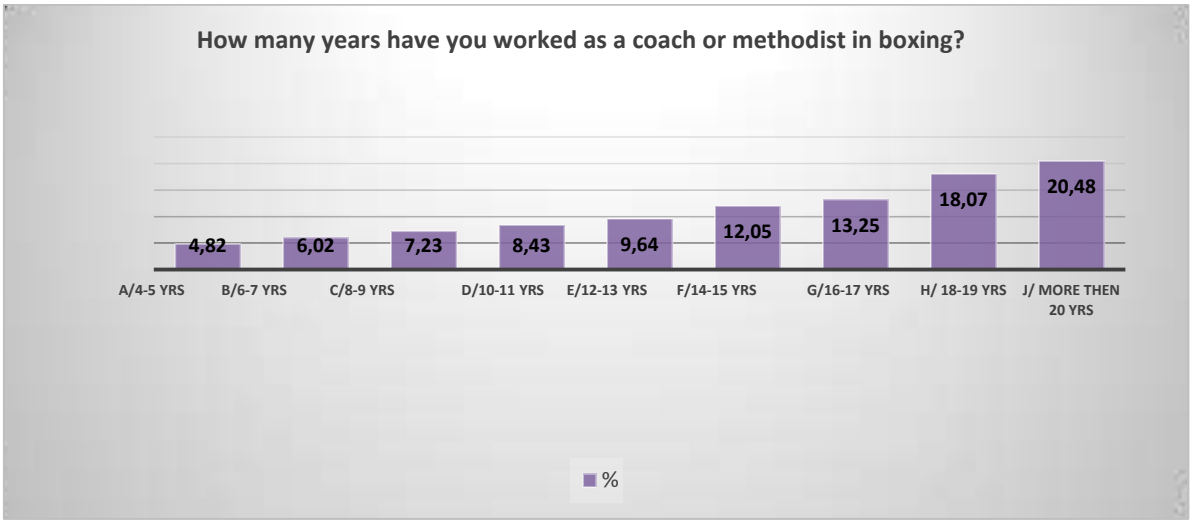

Figure 1
Distribution of answers to the question:
"How many years have you worked as a coach or methodist in boxing?"

The internal conviction of sports educators and coaches is probably the result of the accumulated professional experience that builds a true sense of the key components that influence the quality of the boxers' sports training and the level of their sporting achievements.

In this direction is the next question: "What is the importance of diagnosis and evaluation in the selection, in your opinion, to improve the effectiveness of the sports-training process in the box?" - (fig.2).

The opinion of the experts in the field of boxing in Bulgaria is very clearly outlined: 93.98% of them state that the diagnosis and evaluation considerably increase the efficiency of the sporting-preparation process. The discovery of boxing prospective children should be combined with the creation of favorable conditions for their development during their long-term sports training.

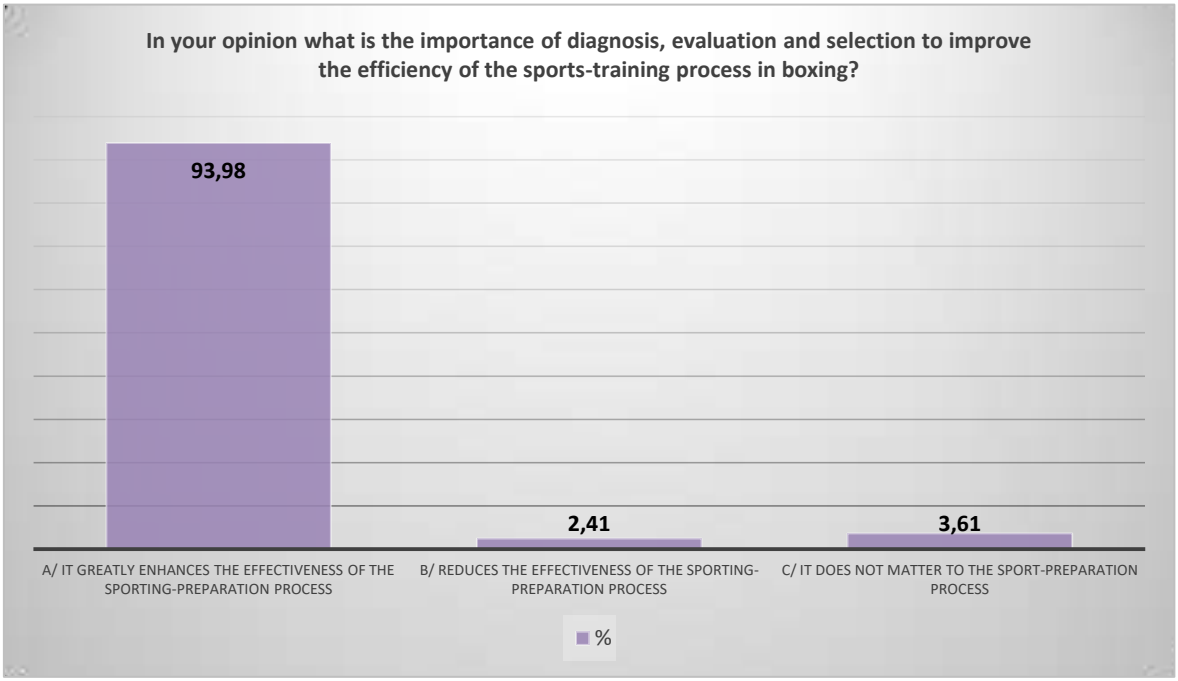

Figure 2
Distribution of the answers to the question: "In your opinion what is the importance of diagnosis, evaluation and selection to improve the efficiency of the sports-training process in boxing?"

In relation to the significance of the various manifestations of motor quality force, the explosive force is the most important for boxing (54,22%) - fig. 3. Boxing is a dynamic, acyclic and mostly anaerobic sport where blasting is of particular importance. The motor activity in this sport is in the area of the maximum and submaximal capacities, which are ensured by the strength of the boxers.

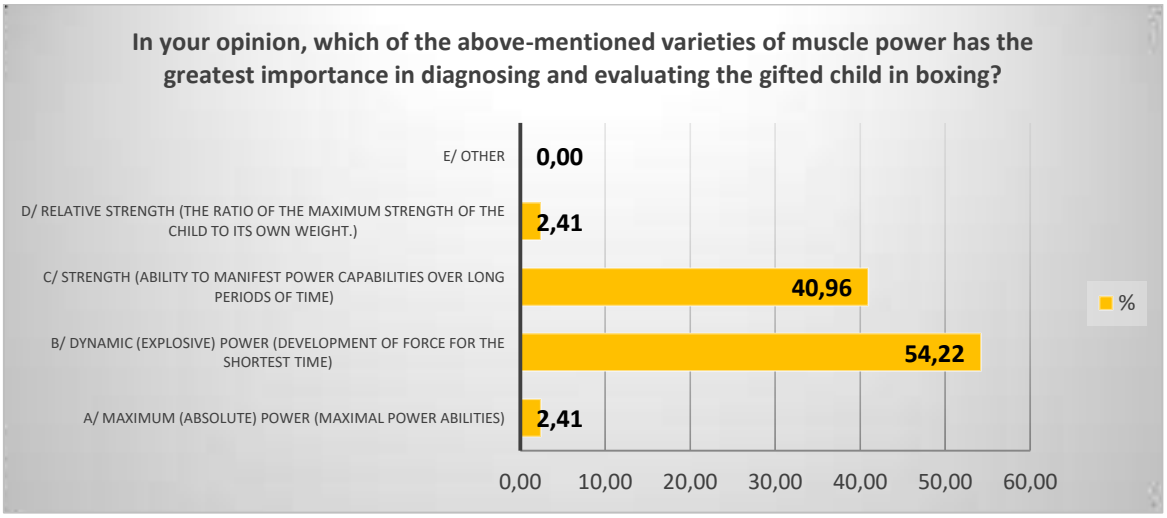

Figure 3
Distribution of responses to the question: "In your opinion, which of the above-mentioned varieties of muscle power has the greatest importance in diagnosing and evaluating the gifted child in boxing?"

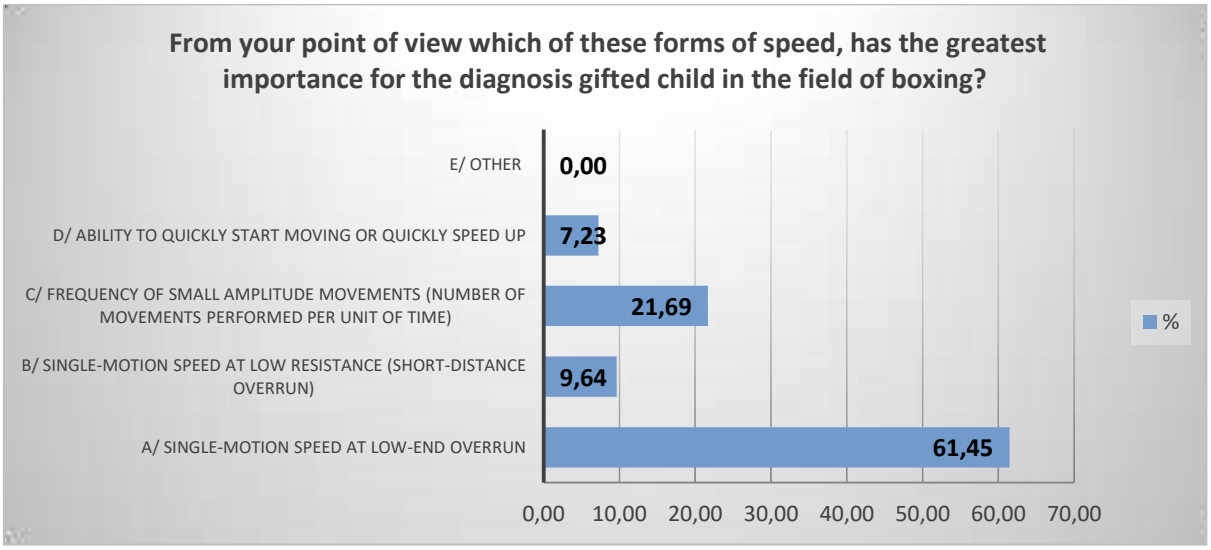

Figure 4
Distribution of answers to the question: "From your point of view which of these forms of speed, has the greatest importance for the diagnosis gifted child in the field of boxing?"

The results show that the opinion of the specialists on the role of the different forms of speed is mainly focused on the significance of the reaction speed (61.45%) and the frequency of the movements at low resistance (21.69%) - fig.4.

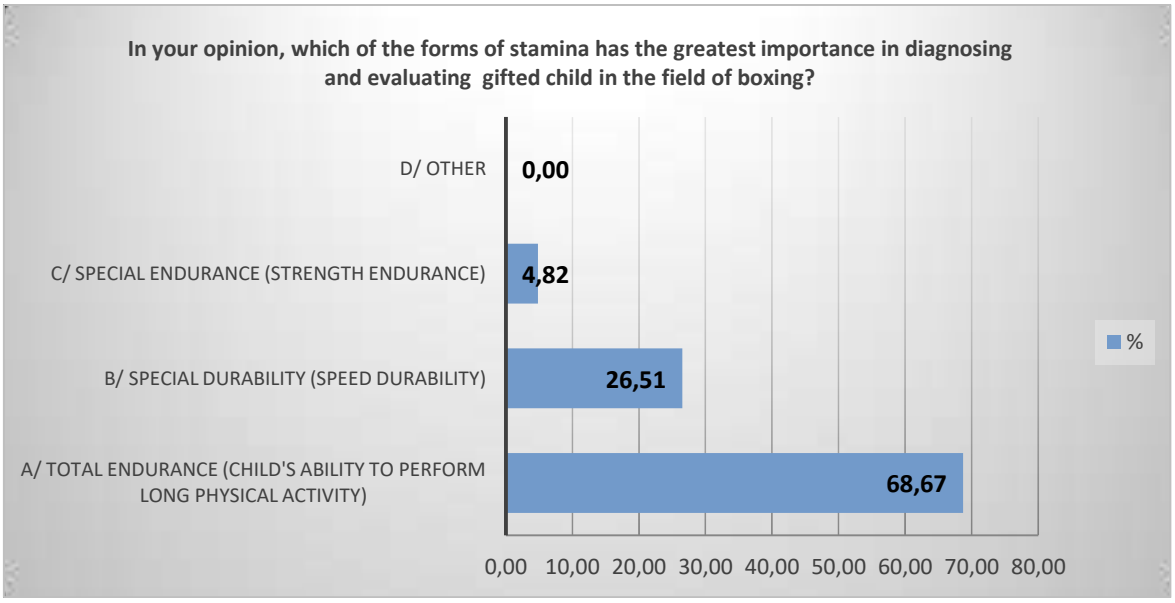

Figure 5
Distribution of the answers to the question: "In your opinion, which of the forms of stamina has the greatest importance in diagnosing and evaluating gifted child in the field of boxing?"

The data from the survey show (Figure 5) that according to the specialists, the highest durability (68,67%) is the most significant, followed by the special endurance (26,51%).

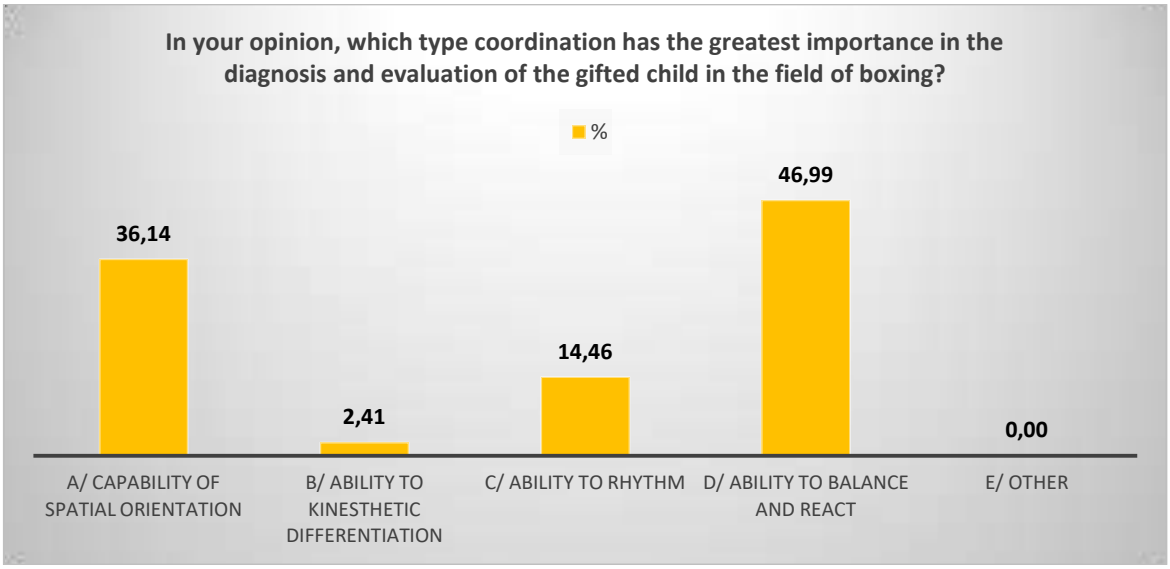

Figure 6
Distribution of the answers to the question: "In your opinion, which type coordination has the greatest importance in the diagnosis and evaluation of the gifted child in the field of boxing?"

Coordination skills are of particular importance for success in boxing. This is also confirmed by the results presented in Figure 6. According to the experts the greatest importance was the balance of equilibrium and reaction (46.99%), followed by the spatial orientation ability (36.14%) and the rhythm ability (14.46%).

The development of amateur boxing in Bulgaria depends on a complete set of factors at a different level, which are in complex interaction (social, financial, economic, demographic, etc.). One of the most crucial factors is the professional competence of the coaches is their conceptual and innovative attitude towards the contemporary prerequisites and conditions for increasing the effectiveness of the training process. That is why the issue of preparing the coaches to successfully cope with the challenges of their professional activity is significant for establishing the prestige of Bulgarian amateur boxing world-wide.

The main issue, which directly affects the quality of "boxer-coach" interaction, is related to the way the training process is managed. As Gordon rightly points out, control in sports training makes it possible to receive feedback in athlete-coach relationship, and on this basis to raise the level of management decisions in the training process.[8]

The function of the coach, as the organizer of the training process, is also bound to stimulate and promote the development of the boxer's self-control, his personal motivation for achievement, his self-confidence and confidence in his own abilities. Interpreting the

[8] С. М. Гордон, Спортивная тренировка: науч.-метод. Пособие. М., Физическая культура – 256 с. 2008.

training process as an interaction between the coach and the boxer puts the focus on the athlete's active participation in his own sports self-improvement.

The quality of the management in sports training, as Gordon notes, can be established with the criterion of effectiveness. The author states that as effectiveness of the training process is assumed the realization of the potential athletes' ability to achieve the results. As well as, the possibility of reproducing the methods offered to achieve higher levels of performance for other athletes, regardless of sport discipline.[9]

In this regard, V. G. Nikitushkin notes that in recent years there has been a tendency to raise the attention of the specialists to the organization of control, which is already considered as one of the most important units in the system of management of sports training. However, it should be stressed that control is understood not only as the sum of information that we are interested in, but also as a comparison with already existing data (plans, control indicators, norms, etc.) and subsequent analysis, finishing by making adequate management decisions.[10]

Current control methods should be limited to the following areas: an assessment of the indicators that are fundamental to self-improvement of young boxers. In addition to this there should be an assessment that characterizes the level of special training, based on the informative indicators of the athlete's current state, which helps in managing the training process.[11]

According to V. V. Afanasiev, A. V. Murahov, I. A. Ossetrov and P. V. Mihailov, the control should be carried out in the process of training management. By control in the sports metrology is meant the ensemble from site (system) information for subsequent changes in its operations.

Control over physical training involves measuring the level of development of speed and strength, endurance, flexibility, equilibrium. Three main types of testing are possible: 1) comprehensive assessment of physical training using a wide variety of tests; 2) an assessment of quality level; 3) assessment of the level of development of some motor quality- for example, the level of the speed of endurance.[12]

Improving the control system and its subsystems from a lower order: measuring, evaluating and optimizing is an important prerequisite for overcoming the severity of multi-year training process of boxers. As has already been pointed out, the development of objective criteria for diagnosis and assessment of the potential athletes' ability, in line with the requirements of amateur boxing, largely determines the quality of the coaching activity.

Among control, diagnosis and selection in sport there are narrow integrative relationship. In fact, the disclosure of the basic principles and regularities in implementation of control activity contributes to the scientific justification of the diagnostic toolbox.

[9] С. М. Гордон, Спортивная тренировка: науч.-метод…
[10] В. Г. Никитушкин, Современная подготовка юных спортсменов. Методическое пособие. Москва: 70 (2009).
[11] В. Г. Никитушкин, Современная подготовка юных спортсменов… 76.
[12] В. В. Афанасьев, А. В. Муравьёв, И. А. Осетров, П. В. Михайлов, Спортивная метрология: учебное пособие. (Под ред. В.В. Афанасьева). Ярославль, Изд-во ЯГПУ – 242 с. 2009.

The functional purpose of diagnosing and evaluating athletes is not only to select prospective young boxers, but also to improve individual training programs, to make the necessary adjustments, and to promote the motivation of adolescents for sports self-improvement.

Based on the multidimensional approach the leading indicators of the physical and mental training of young boxers (13-15 years) contains different components, which are in complex relationships and dependencies among themselves. They are targeted with the help of the complex statistical analyzes, such as Kruskal Wallis test, Welch test, ANOVA, Bonfiron test, correlation analysis, dispersion analysis and regression analysis. The design of the theoretical model is a consequence of the elucidation of the integrative relations and dependencies between its main components (subsystems of lower rank).

The results of the statistical analyzes of the primary empirical material from the conducted researches are an objective proof of the validity and authenticity of the proposals in the dissertation thesis about a theoretical model for the structure and functional purpose of the diagnostic and evaluation system in the selection in a target age range.

The applied test on one hand give reliable, statistically significant information on the level of development of basic amateur boxing physical and mental characteristics. On the other hand - reveal the main components of the structure of the developed diagnostics and evaluation system in the selection of the young boxers in this age range.

The test battery for multi-dimensional assessment of psycho-physical status of 13-15-year-old boxers in the Republic of Bulgaria includes 18 tests (3 anthropometric, 11 power-related and 4 psychological tests). The disclosure of complex integrative relationships and dependencies between the components of the original battery of tests determined the need to construct a diagnostic and evaluation system for selecting prospective boxers aged 13-15. The information gives feedback and timely correction of observed problems that would affect the health and performance of athletes.

Diagnostics is predominantly aimed not only at objectivizing the current state of the athlete, but also in assisting the realization of overall control in his sport preparation (physical and psychological), forecasting the achievements and ensuring the effective management of the training process.

The system of diagnostics and evaluation in sports selection of 13-15-year-old boxers contains subsystems of a lower order, which build its structure. There are integrative links and dependencies between the components of the system that determine both its overall functioning and its role in optimizing the training. The system itself, however, also interacts with environmental factors at various levels and with varying degrees of significance.

The evaluation of the results must also comply with certain principles and requirements which ensure the scientific justification, objectivity and reliability of the subsequent conclusions. In fact, the final stage of conducting the diagnostic procedures is related to the process of evaluating the results that are at a different level of measurement, in other words making assessments of athletes' achievements during testing.

V M Zaciorsky believes that in a full, expanded way the evaluation is done in two stages. In the first stage, the sports score is displayed based on the so-called score scales which became points (intermediate score). The second one is after comparing the collected points with predetermined norms, then determines the final score.[13]

The main tasks of the evaluation, according to the author, are limited to the necessity:

1. Match different achievements in the same task (test, sports discipline, exercise, etc.).
2. Compare achievements in different tasks. The main thing in this case is to equate scores of achievements with equal difficulty in different sports or race programs. Such equally difficult achievements are called equivalent.
3. Compile norms. In individual cases (school assessments, etc.) the norms coincide with the gradation of the rocks.[14]

The development of evaluation tables should always be in line with the pre-set objectives and the parameters of the rating scale used. According to V. Zaciorsky, the purpose of each table is to transform the displayed sports score into provisional points. The law of the transformation of sport results into scores is called a score scale. It can be given in the form of mathematical expressions (formulas), tables or graphs.[15] For the purposes of our study, we have chosen the system for assessing the basic parameters of the anthropometric, motor and psychological status of 13-15-year-old boxers to be based on the peristaltic scale of assessment, and in particular the decimation of decile as a variation of percentiles.

In science, percentiles are a kind of norms that are applicable to any type of study at various levels of measurement. This method of assessment is recommended by the authors in many subjects, but in a small sample it is not recommended.[16] The main advantage of the peristaltic scale is the easy processing of results and the visibility of the exhibition. In the specialized literature Bulgaria, it is assumed that the 25th percentile (first quartile) is the low results, the 75th percentile are the high results. Among them are the average results of the measurements. By doing this, a scientifically estimate of the low, medium, and high values of each variable can be made and the value corresponding to the 25th and 75th percentile is objectivized.

As noted by B. Cohen and Br. Lee, the most important percentiles are decile (10%, 20%, 30%, etc.) and quartzites (25%, 50%, 75%).[17]

According to the level of measurement of the variables we selected the peristaltic scale - using the decile to evaluate the results of the conducted audits and tests of 161 boxers aged 13 to 15 years. We have focused on this type of rating scale as its parameters correspond to the volume and scope of our research. Furthermore, after a thorough study of the specialized literature we found that this evaluation scale correlates

[13] В. М. Зациорски, Основи на спортната метрология. София, Медицина и физкултура: 36-37 (1982).
[14] В. М. Зациорски, Основи на спортната метрология… 40-41.
[15] В. М. Зациорски, Основи на спортната метрология… 38.
[16] В. В. Афанасьев, А. В. Муравьёв, И. А. Осетров, П. В. Михайлов, Спортивная метрология…
[17] Б. Коен, Бр. Лий, Основи на статистиката за социалните и поведенческите науки. София, Изток-Запад: 20 (2013)

with the objectives of our research and guarantees a high degree of objectivity of the evaluation results. The calculation of the distribution of measurement values in percentile rank is done automatically by the specialized software IBM SPSS Statistics Version 20.

It is accepted in science that the 50th percentile (fifth decade) corresponds to the median, which is one of the three main measures of distribution. The distribution is the set of values for a given variable, along with the relative frequency of each value. Persians above 50 are higher than average, and those below the 50th percentile or 5th decade reflect the relatively low distribution scores.

In this regard, it is necessary to specify that the tenth percentile corresponds to the first decile, the twentieth percentile corresponds to the second decile, and so on. For example, to estimate the explosive force of the lower limbs, the jump distance test from a place finds that the tenth percentile or the first decile corresponds to 175 cm, up to this value, 10% of the results are in this category. The next twentieth percentile corresponds to the second decile and it shows 180 cm; The 30th percentile corresponds to a third decyl, now 184.6 cm; 40 percent corresponds to the fourth decyl - 188.6 cm. The values up to the 40th percentile and the 4th decyl account for 40% of the distribution; The 50th percentile corresponds to the fifth dec. - half of the surveyed people - up to 192 cm. The sixth decyl is 198 centimeters, the seventh is 203 centimeters, the eighth is 215 centimeters, and the 90th percentile is the ninth decile - 220 centimeters, and above that figure the last ten percent.

The lowest value in measuring the explosive force of the lower limbs with the jump distance test from a place is 175 cm, the average is 192 cm and the highest is 220 cm. This result arranges the other ones as well.

Test:		**Line test (cm)**	**Difference height-extension**	**Respiratory difference (cm)**	**BMI – (units)**	**Running 30 m. (sec)**	**Running 800m. (min)**	**Jump distance (cm)**	**Tepping test-total number comfortable hand**	**Tepping test-total number uncomfortable hand**	**Throwing. thick ball 3 kg (cm)**
Points (decyls)	**1**	20	-5	0 - 5	26,3	4,77	3,26	175	155	115	402
	2	18	-2	6	23,014	4,65	3,2	180	162	135	474
	3	16,7	-1	7	20,96	4,6	3,15	184	174	149	510
	4	14	0	8	20,062	4,55	3,11	188	183	155	570
	5	13	1	9	19,53	4,5	3,08	192	184	165	620
	6	12	3	10	18,802	4,45	3,04	198	191	167	670
	7	11	5	11	17,92	4,4	3,01	203	198	172	681
	8	10	7	12	17,23	4,38	2,57	215	207	180	706
	9	8,2	8	14	16,568	4,34	2,51	220	219	199	790
	10	Above 8,1	Above 9	Above 15	Below 16,567	Below 4,33	Below 2,50	Below 221	above 220	Above 200	Above 791

Table 1

System for diagnosis and assessment of anthropometric, motor and psychic indicators in the selection of 13-15-year-old boxers (Part I) - N = 161

Test:		Blind Stork (sec	Coordination eye-hand (pcs)	Depth of slope (cm)	Upper legs - to refusal (pcs)	Abdominal presses - to refusal (pcs)	Test Peev and others. (true minus wrong)	Correction table (time seconds)	Correction table (errors)	Interlaced Lines (Correct)	Interlaced lines (time - seconds)
Points (decyls)	**1**	36,4	18	1,6	13	47	4	330	15	7	420
	2	43,8	20	2	15	50	5	301	12	9	417
	3	50	21	3	16	60	6	250	10	11	410
	4	55	22	3,9	17	67	7	230	8	12	401
	5	59	24	4,2	18	77	8	220	7	13	393
	6	61,2	25	5,1	19	80	9	208	6	14	386
	7	66	26	6	21	87	10	190	5	18	361
	8	67	28	6,8	25	93	11	178	4	20	291
	9	70,8	29	7,5	29	100	12	168	3	21	282
	10	Above 70,9	Above 30	Above 7,6	Above 30	Above 101	13	Below 166	Below 2	Above 22	Below 281

Table 2
System for diagnosis and assessment of anthropometric, motor and psychic indicators in the selection of 13-15-year-old boxers (Part II) - N = 161

After calculating the scores evaluation by the percentiles (the decile), integrated (multidimensional) evaluation of boxers in different age groups was performed - 13 years, 14 years and 15 years:

Integral (multidimensional) evaluation of 13 year old boxers (boys): over 169 points (extremely high scores); from 127 to 168 points (high scores); 85 to 106 points (average results); under 84 points (low scores)

Integral (multidimensional) evaluation of 14 year old boxers (boys): over 179 points (extremely high scores); from 137 to 178 points (high scores); 95 to 116 points (average results) under 94 points (low scores)

Integral (multidimensional) evaluation of 15 year-old boxers (boys): over 189 points (extremely high scores); from 147 to 188 points (high scores); 105 to 126 points (average results); under 104 points (low scores)

The most appropriate way to scientifically prove the objectivity of the completed research (anthropometric, motor and psychological) is the thorough and adequate statistical processing of the primary empirical data.

Based on the analysis of numerous studies, in the field of sports selection it can be assumed that the creation of an objective, up-to-date and scientifically-based system for diagnosis and evaluation in the selection of amateur boxing directly reflects on the quality of the training process and the achievement of high success in competitions.

In accordance with the preliminary expectations, the results of the theoretical analysis and the data from the empirical studies reveal the need to develop objective criteria for diagnosing and assessing the leading motor, psychomotor and psychic characteristics of the prospective contestants in the amateur boxing.

As illustrated by the analysis of literary sources and the results of the empirical research, the specificity of the amateur boxing requires a consistent multidimensional approach to the creation of a science-based diagnostic and evaluation system for the selection of 13-15 year olds. This approach enables the tasks related to the identification of the informative criteria regarding the development perspective in the field of this sport. In addition, the objectification of the main components in the structure of the diagnostics and evaluation system and the revelation of the complex relations and dependencies between them.

The conceptual specification of the parameters of the empirical study, the existing need in the sports practice by the clarification of the specific practical and applied dimensions of the problem addressed, have helped developing an accessible and easily applicable system of objective criteria for the diagnosis and evaluation of prospective athletes for the needs of amateur boxing in our country at the modern stage of development.

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