ANALYSIS OF TECHNICAL LEVEL OF ROMANIAN SQUASH PLAYERS

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Abstract. Squash is a popular sport practiced around the globe by millions of people. In the last few years this sport star being played more and more in Romania. Squash is perceived as a very dynamic sport activity challenging in the same time the physical capacities and the technical skills of the players. In racquet sports, technical skills are revealed by the ability to hit a shot accurately toward a targeted area. The aim of this study was to evaluate the current technical level of the Romanian players using the Hunt Squash Accuracy Test (HSAT).

Eleven male and females squash players, from 2 clubs, performed HSAT which consists of 375 shots across 13 different types of squash strokes on both the forehand (FH) and backhand (BH) side. The Romanian players (32.4 ±12.5 yo; 76.4 ±18.6 kg; 172.8 ±10.5 cm) have an experience of 9.6 (± 8.3) months and practice in average 2 times per week for about 90(± 30) min with a “friend”. The HSAT score for Romanian players was 29.3% overall with 29.5% for FH and 24.0% for BH.

The relative high percentage of shots error (70%) indicates that Squash players in Romania are not doing specific and structured training with a specialized coach. These findings strengthen the believe that Squash is played in Romania just at amateur/leisure level.

Keywords: performance; testing; accuracy
THE TRIAL - PERFORMANCE RELATIONSHIP IN JAVELIN AND DISCUS THROWING EVENTS

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Abstract. In high level sports, trials are essential for the performance planning and monitoring, for establishing the threshold reached and estimating performance. Control standards must allow evaluating the adaptation level of major functions to the event-specific demands, the development stage of motor qualities and the technicality level. That is why they are in conformity with the effort specificity in the respective event, with the individual particularities related to age and gender, as well as with the motor structures characteristic to technical gesture. Starting from the hypothesis that, under certain conditions, the results obtained in the trials have a relevant prediction power, there have been taken into account 18 male and female athletes, discus and javelin throwers. For all trials, the coefficients of correlation with the athletic discipline were calculated, the measurands were labelled and the graphs were interpreted. The research has revealed a divided sample of athletes, the fact that some trials correlate with one another, while others correlate with the competitive results, and that the progress rate is relatively constant for the labelling changes. The final conclusion is that a small part of the trials imposed by the Romanian Athletics Federation are significant and provide information that argues an acceptable prediction of the results in the oncoming competition. In an antithesis, most of the trials have a very weak power of predicting the competitive results immediately after their application.

Keywords: javelin throw; discus throw; trials; competition event; correlation
THE RECOVERY OF THE EFFORT CAPACITY DURING TRAINING CAMPS

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Abstract. This research intends to design a pattern for the recovery of the exercise capacity in centralized training sessions. Recovery is a complex process aimed at restoring and overcoming the initial values of homeostasis, pursued in all planning structures, starting from the training lesson (breaks between exercise sessions), continuing with post effort recovery, stage and weekly recovery, and even post-Olympic cycle recovery. Recovery after effort is an increasingly significant component that conditions the athletic performance, being considered a performance reserve.

The research is one of practical nature and was conducted over a period of one year. The subjects participating in the research are CSO Pantelimon rugby players, who are also in the National Division of Rugby. The findings of the research resulted from weight control and heart rate measurement.

The research methods used were scientific documentation, observation, experiment, measurement, statistical and mathematical method, graphical method.

The research results were reflected by developing a recovery pattern for the exercise capacity, able to substantiate accumulations from the centralized training session.

The research findings confirm the working hypothesis in the light of the results obtained.

Keywords: recovery; training camp; scheme.
THE INFLUENCE OF SPECIFIC TRAINING ON EXPLOSIVE POWER IN TOP ATHLETES
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Abstract: Explosive power is an important aspect in sports events such as jumping and throwing as well as in other sports like tennis, boxing, wrestling and most sports games. To clarify whether explosive muscle power depends only on the macroergic phosphate compounds or other factors, which can be influenced through specific training, are also involved, this study used a Wingate testing protocol to follow the evolution of anaerobic performance parameters in 450 top athletes trained for aerobic (70 athletes), anaerobic (224 athletes) and mixed events (156 athletes). Parameters studied were the Peak Power (PP), Time at Peak Power (TPP), correlations between them and Average Powers recorded on each 5 seconds interval of maximal effort. The results showed that TPP was shorter than 5 sec only for the alactacid anaerobic groups (3.630 sec for men and 3.960 sec for women), the other athletes reaching maximum power after 5 sec. Most athletes registered the highest average power in the second 5-second interval (5-10 sec) and not in the first one (0-5 sec), as expected, except for the alactacid anaerobic group. The anaerobic alactacid and mixed energogenesis groups achieved a significant negative correlation between PP and TPP (<0.05), these groups being composed of athletes whose specific training aimed to improve their neuro-motor skills and movement pattern. The results of this research show that explosive power depends on the muscle composition, but also confirms the importance of motor skills in improving the recruitment velocity of fast muscle fibers and muscle power generation.

Key words: explosive power; Peak Power; Time at Peak Power; training
STUDY REGARDING THE MANIFESTATION OF THE DRIVING QUALITIES RELATED TO SPEED SPECIFIC TO BEGINNER FENCERS

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Abstract. The objective of this study is determining the initial level of the driving qualities related to general and specific speed of children for the three weapons used in fencing: epee, sabre and foil.

Research subjects. The study was performed on a sample of 36 children (6 boys and 6 girls for each weapon: foil, epee and sabre), aged between 8 and 10 years old and having a 2-3 years’ experience in fencing.

Research methodology. During the investigations, the following 6 tasks and tests were used in measuring the driving qualities related to speed (general and specific): 30 m run with start in a standing position, the test with the falling ruler besides the wall, foot tapping, 28 m movement with forward and backward steps, catching the glove at the mannequin and lunge kicks of the mannequin.

Results. For the speed of movement test, the 30 m run with start in a standing position, the central tendency for foil is 6.6 seconds, for sabre the median is 7.11 seconds and for epee the median is 6.69 seconds. For the 28 m movement (the specific movement speed), the median was 17.56 seconds in sabre, 21 seconds for the most sportsmen in epee, while the foil children obtained a 22 seconds average.

Conclusions: there are significant differences regarding the driving qualities related to speed between the three weapons of fencing (foil, epee and sabre).

Keywords: fencing; speed; sport and performance
THE UTILIZATION OF METABOLIC TRAINING ZONES ON PUBERTAL SWIMMERS

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Abstract.
The beginning of training swimmers at a young age and the continuation of training throughout the stages of growth should target acquisition of the best results at junior and senior levels. Taking into consideration the functional and somatic characteristics of pubertal swimmers, the training plan involved the use of workouts structured on metabolical training zones similar to the senior level swimmers. Through this experiment, we aimed to highlight the effects of training methods based on the model for senior swimmers on the aerobical capacity of pubertal swimmers. By using advanced methods of monitoring the effort made by pubertal swimmers during training, we gathered data which we then processed using statistical and mathematical methods. Comparing the results of the T-2000 test before and after the observation period showed an average improvement of 40 seconds, indicating that the training plan based on training zones similar to the senior level swimmers facilitated a development in the aerobical capacity of the pubertal swimmers.

Keywords: training zones; effort monitoring; pubertal; aerobical capacity; T-2000 test.
A group of 42 ice hockey players took part in the study. The main goal was to use logistic regression and Kohonen maps to optimize recruitment process during a draft into an ice hockey team. Statistical analyses were carried out on the basis of results of the independent variables (physiological, physical profiles and on-ice performance). To build mathematical models is necessary to specify the optimal choice of explanatory variables. Optimal selection of variables for Kohonen feature maps (data mining analysis) was carried out using logistic regression. Evaluation of goodness of fit of the model to the data was based on the Hosmer-Lemeshow test. On the basis of the constructed logistic regression model it will be possible to determine the probability of success of the athletes during following selection processes to the team. The resulting models have the form of a topological map. In taxonomic analysis each node can be separated. Topological map constructed in this way can be used in the recruitment to the top level ice hockey Polish team.

Keywords: data mining analysis, logistic regression, recruitment for sport, mathematical model
CREATIVITY, RESISTANCE TO MENTAL FATIGUE AND COPING STRATEGIES IN JUNIOR WOMEN HANDBALL PLAYERS

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Abstract. The scope of this study was to examine the existing correlations between creativity which is expressed through fluency (abundance of ideas generated in a certain time frame) and mental flexibility (in contrast with the rigidity of thinking), the resistance to mental fatigue and the coping modalities. In order to investigate the research matters, the following methods were used: observation, conversation and tests - Imagination and Creativity test, Resistance to Mental Fatigue (RNE Test) component of PSISELTEVA tests, designed by RQ Plus and the COPE Survey (Coping strategies). The study comprised 11 junior female handball players, aged between 16-17 years old. In our study, we used the Spearman correlation, which revealed important relations between the results obtained by the female athletes for creativity - expressed through fluency, as well as for the resistance to disruptive factors, the performance coefficient and the scores obtained by the female handball players for: planning, looking for instrumental support, looking for emotional support, positive reinterpretation and emotional discharge. The results analysis indicates a positively significant correlation between creativity - fluency and the scores obtained for positive reinterpretation, as a coping strategy, also a positively significant correlation between the performance coefficient and planning as a coping modality and negatively significant correlations between the resistance to disruptive factors and the following coping strategies: looking for instrumental support, looking for emotional support and emotional discharge. The results underline that the improvement of the resistance to disruptive factors, the performance coefficient and of the fluency may have a positive impact on the coping strategies used by the athletes to overcome stressful situations.

Keywords: creativity; mental fatigue; coping strategy; handball.
COGNITIVE ABILITIES IN ELITE ROMANIAN JUNIOR TENNIS PLAYERS

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Abstract. Analogical transfer, attention and topographical memory represent cognitive abilities. Analogical transfer refers to those processes which enable us to solve new problems based on similarity to already solved problems. Attention does not have inherent reflectory content, being present in all psychical functions (perception, representation, thinking etc). The topographical memory represents a kind of knowledge stored in the form of spatial representations. The purpose of this study was to investigate some cognitive abilities and the sports performance of the elite Romanian tennis players. The subjects who took part in this study were 12 male athletes, aged between 15 and 17 years old, ranked in top 15 junior players in Romania. To solve the research issues, we used: observation, conversation, test – the computerized tests ANALOGIE, TAC and MT, within PSISELTEVA tests, elaborated by RQ Plus, statistical processing methods - SPSS and data interpreting. Using the Spearman correlation there have been important relations highlighted between the analogical reasoning coefficient, the performance coefficient (in the case of the ANALOGIE test), the learning ability coefficient (in the case of TAC test – concentration of attention) and the sports performance, expressed through the ranking position (the official ranking system). The results underline that the improvement of the analogical transfer ability and learning ability coefficient (rapid adaptation of attention at new perceptual condition) may positively influence the evolution of the tennis players on the court.

Keywords: analogical transfer; concentration of attention; topographical memory; tennis.
Abstract. Artistic gymnastics is such a spectacular sport due to the strength and elegance of women gymnasts, as well as to the difficulty of exercises they perform. The gymnastics has seen a considerable rise over the years. On the technical level, we can appreciate that being at an upper limit, the difference between two gymnasts equal in terms of technical performance, makes it the execution correctness and the complexity of artistic level.

The learning of any element, in our case the "Free (aerial) walkover forward, landing on one foot" forward Danilova on beam, must be preceded by verification of the motor skills that condition the execution, and improvement requires means which lead gradually to the independent and creative execution of the element and full exercises. The research involved the motor skills tests to assess some parts of coordinative ability: Balance rail, Bass test, Fukuda test, Miron Georgescu test, considered fundamental in learning, demonstrated that the different levels of motor skills of women gymnasts put their mark on learning of the technical element studied.

Keywords: artistic gymnastics; motor skills tests; balance beam.
CONSIDERATION REGARDING THE GUIDANCE OF THE SPORTIVE SHAPE FROM A WEEKLY CYCLE TO ANOTHER USING ANALYSIS SOFTWARE IN HIGH PERFORMANCE FOOTBALL

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Abstract. The content of research is trying to prove that physical training can be optimized from a weekly cycle to another, in quantitative and qualitative terms. One of the requirements is to always check the training level of the team with various stimuli and in this context, the sportive shape from one game to another. This can be monitored using the "INSTAT" System of analysis after each competition. The statistic obtained gives us physical data that we can compare from one game to another, both within the team, but especially individually, such as the distance traveled by team/player, the total distance broken down by intensities, the number of accelerations and sprints. These issues confirm or disprove that the guidance of the effort from a competition to another is in optimal standards. As a result of the interpretation of the data obtained by the analysis system, it can be found a pattern to achieve and maintain the optimum sportive shape to ensure a superiority, on the physical plane, over the opponent. The permanent individualization of the training process is crucial in a weekly cycle because not all the athletes react the same way to the training stimuli, reaching unwanted areas of effort for that training and thus disturbing the preparation process in the next weekly cycles of the competitive period.

Keywords: football; physical preparation; sportive shape.
Comparative Study of Kinematic Parameters of Circular Punch Applied in Semi-Contact and Full-Contact System

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Abstract. Using inertial navigation technology built into MOVEN motion capture equipment, we have calculated, using the position of a kick boxer’s body segments, several kinematic parameters of circular punch features. These are the length of the fist trajectory from the beginning of the movement to its contact with the target, the fist path length measured from the beginning of the extension of the elbow to the contact with the target, the variation in time of the angle of extension of the elbow, the variation in time of the line of the shoulder and hip and the difference between them during the impact with the target, the average speed on certain motion segments, maximum speed of the fist before impact with the target, the acceleration of the fist at the impact with the target. Measurements were made at Ciprian Sora Sports Club in Bucharest on 28 August 2014 and the subject was the national champion of the year in full contact kick-boxing and kick-boxing world vice-champion in 2014 in the category of 63 kg. After fitting the MOVEN equipment and its calibration was performed, the subject applied ten circular punch strokes in semi-contact system and then ten circular punch strokes in full-contact system. Data acquisition was performed with a frequency of 100 Hz (the rate of the acquisition of 10 ms). Data were converted using the equipment’s dedicated software in .mvnx format and then were imported in Excel 2010 and processed. The mentioned kinematic parameters were calculated to analyze the strike features and the comparison of each fight system.

Keywords: kick-boxing; circular punch; kinematic parameters; MOVEN.
Abstract.
The attributes of the athletes behaviour occur if the teacher conducted an activity according to the principle of coaching.
The purpose of the research is to investigate how students perceive their own behavior athletes and coaches at the following application guidelines coaching. The method used was the questionnaire consists of 9 items, the last being a construct suggestively called “the wheel of life”
The investigation of the athletes level of motivation, preferences and autonomy in lessons are ways to highlight the direct effects of coaching mastery in valuing their skills.
Athletes responses to the applied questionnaire items are feedback reactions to the approach of the teacher coaching style.
It is difficult to know the motivation of the athletes because in many cases the real reasons of some hidden behaviour are not easily revealed.
This restraint of the athletes is caused by a wide range of affective processes, especially emotions. This is why the teacher should use indirect means of investigation or other ways which will allow to know the athlete (insight) and in his capacity as a person.
The last item was conceived as a construct - wheel life - resulted from the share of satisfaction level on domains: health, sporting career, personal development, fun, physical environment, relationships and more. These come to complete the picture on the level of study (student awareness and accountability in academic and sports support). It shares a visualization of areas of life.
The analyzed results show a high degree of assimilation of the interventions through coaching.

Keywords: coaching, motivation, skills
CONTRIBUTIONS TO THE ASSESSMENT METHODS OF PHYSICAL TRAINING IN JUNIOR ALPINE SKIING

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Abstract. In this paper I have suggested the introduction of a set of tests meant to assess the physical preparation of the junior skiers from Sinaia School Sports Club. The set of tests is taken from the model of selection and assessment of Austrian skiers. The first test evaluates the motor co-ordination specific to alpine skiing, the second one assesses the expansion in height and the force of explosive leg muscles; the third test assesses force when being strained and the fourth one evaluates co-ordination, agility and stamina for mixt effort lasting approximately the same as a slalom race. The experiment consisted of the assessment of skiers’ preparation at the beginning of training in the unspecific period and then at the end of this period. The training period took place on the premises of the sportive base of Sinaia School Sports Club and it lasted for 6 weeks, evaluating 12 sportspersons aged between 14 and 17 were assessed, 4 of whom were girls and 8 were boys. As a result of interpreting the results of the two testing sessions and after having compared them, improvement has been noted as far as all motor tested components are concerned.

Key words: physical training; evaluation; series of tests;
STUDY REGARDING COORDINATION AT LANDINGS PERFORMED IN WOMEN’S ARTISTIC GYMNASTICS

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Abstract. The purpose of this study was to investigate the existing correlations between the intersegmental coordination and the scores obtained by the athletes for the technical element – landing in artistic gymnastics. The subjects who took part in this study were 21 female athletes, aged between 9-10 years old, practicing artistic gymnastics. The RCMV test, included into the PSISELTEVA battery, developed by RQ Plus, was used to evaluate the intersegmental coordination, expressed through some psychomotor-related parameters (perceptual-motor learning ability, performance coefficient, personal optimum rhythm, resistance to disruptive factors and resistance to time pressure). Using the Spearman correlation there have been important relations highlighted between the results obtained at the RCMV test by the female athletes who practice artistic gymnastics and the scores for the technical element – landing (in the case of vault and uneven bars). The analysis of the results indicates that there is a positively significant correlation between the following psychomotor-related parameters: perceptual-motor learning ability, performance coefficient, resistance to time pressure and the scores obtained by the female athletes for landing (in the case of vault). Also, there is a negatively significant correlation between the personal optimum rhythm coefficient and the results for landing (vault). Consequently, the results indicate that the development of the intersegmental coordination may positively influence the technical element - landing of the female athletes practicing artistic gymnastics.

Keywords: intersegmental coordination; landing; vault; artistic gymnastics;
EXPERIMENTAL STUDY FOR IMPROVING THE PHYSICAL CONDITION OF WOMEN HANDBALL PLAYERS IN THE PREPARATORY PHASE

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Abstract. The aim of this research was to highlight the effective implementation of a training program, suitable for the preparatory phase for a Romanian women’s handball team, CSM Bucharest. The physical tests applied on the players were chosen so that they could provide a wide range of information about the most important and necessary physical qualities of a handball player: acceleration speed, coordination, agility and endurance. The tests chosen for this research are: 10-yard acceleration test, Illinois test, Shark Skills Coordination test and 30 – 15 IFT test. Based on the results obtained at those tests and taking into consideration also the preparatory phase specifics, we applied a 7 weeks physical and technical – tactical training program. At the end of this period, the tests were resumed. The differences recorded have shown considerable improvements for the effort capacity of the players, which confirm the effectiveness of planning and programming the training for this period.

Keywords: handball; women; preparatory phase; effort capacity.
ANALYSIS OF THE ROMANIAN NATIONAL TEAM HANDBALL GAME AT THE HUNGARY/CROATIA EHF EURO 2014

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Abstract. In the last month of 2014, Hungary and Croatia were the hosts for the 11th Women European Championship. Excepting for the year 2006, Romania participated to all the other editions organised by the European Handball Federation, with the best performance achieved in 2010, when the national team obtained the bronze medal. At this last edition, Romania finished 9th, out of 16th participating teams, with only one point far from the semi-finals and the overall impression was that Romania was very close to another notable result.

The aim of this research is to show if Romania’s placement at the end of the tournament is the deserved one and if the handball played during the championship lines up with modern handball trends, based on the statistical analysis provided by the European Handball Federation website, but also based on more analysis personally made after watching again the played games.

Keywords: handball; women; analysis; national team.
The results in running events nowadays are improving in an almost spectacular manner. This is due to the advancements in post effort recovery medicine and also in the training methods currently used worldwide, but what still seems to be debatable is the approach when it comes down to the development of the lactic energy system.

The lactic energy system is one of the most important aspect of sports performance that is often neglected by coaches in events ranging from the 200m dash up to the marathon. One of the most common problems raised by the development of the lactic energy system is the fact that it requires the athlete to undertake a high intensity effort for a prolonged period of time. Many new studies now emphasize the importance of the anaerobic threshold in obtaining athletic performance.

Our study here aims to promote methods that can help athletes and coaches to develop more efficient training plans aimed at reducing the injury risk and the improvement of the lactic energy system.

The current research points out the most common training errors that lead to injury during lactate threshold training sessions and ways to avoid future injuries in developing the lactate energy system for running events. We will build on the idea that the lactic energy system can be developed by training at lower intensities and smaller mileage through a careful planning of the effort parameters.

**Keywords:** lactic energy system; lactate threshold; endurance; training.
SWIMMING AND HYDROKINETIC THERAPY AS A SUPPORT FOR SOCIAL INCLUSION OF CHILDREN WITH S.E.N.

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Abstract

This paper aims to highlight the contribution of swimming associated with hydrokinetic therapy for children with special needs. It is known that hydrokinetic therapy maintains and integrates these children into society, but the study we propose and the data we report will show that associating swimming and hydrokinetic therapy will bring more benefits than applying them separately.

The specific methods applied in hydrokinetic therapy will comply with those applying in swimming and will improve the health of children with special needs.

The study will demonstrate the importance of swimming and kinetic therapy after registering and interpreting data of some groups of children with special needs from Targu-Jiu.

Keywords: social integration, swimming, hydrokinetic therapy.
Abstract. Basketball game, as a team sport, involves, beyond the physical preparation, the individual technical-tactical knowledge essential to the good development of the game, a proactive attitude towards the aim of the action, called “team spirit”. It consists in the interaction of players, being based on mutual knowledge, acceptance and understanding, on cooperation for reaching the common goal. Athletes’ capacity to communicate and create relationships can be analyzed in connection with the individual capacity to shift attention, with the sociometric and preferential statuses, consequently with the team cohesion level. The sociometric analysis will be achieved periodically, according to the team structure, composition and evolution, in order to ensure the optimum integration of athletes into the team, to increase its cohesion and, finally, its performance. Purpose: sociometric analysis correlated to nonverbal communication capacity, while knowing the preferential status indices (Psi), represents the purpose/objective of our research. The 20 subjects are components of the representative women’s basketball team, juniors U16. Hypothesis: nonverbal communication capacity positively correlates with the preferential status index of the team player. Research methods: bibliographic study, PONS (Profile of Nonverbal Sensitivity) test, Moreno’s psycho-sociometric analysis, statistical and mathematical method, graphical representation. Results: the average score obtained by calculating the preferential status indices has a negative value, very close to the value 0, respectively -0.000006. Regarding the minimal (-0.15) and maximal (0.26) values, it can be noted a balanced distribution of scores, as compared to central tendency. The value of Pearson’s correlation coefficient for PONS and Psi variables is $r_f = 0.833$, which represents a very close positive correlation between variables.

Keywords: nonverbal communication; basketball; Moreno’s psycho-sociometric analysis
CORRELATIVE ASPECTS BETWEEN HEART RATE, LACTIC ACID AND EXERCISE INTENSITY IN THE TRAINING OF WATER POLO PLAYERS – JUNIOR III

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Abstract. In water polo game, acyclic movements are prevailing, and the dominant energetic systems are distributed as follows: 10% alactacid, 30% lactic acid and 60% aerobic. The performance-limiting factors are represented by acceleration power, throwing power, etc., all of them relying on a solid aerobic basis. Training monitoring through cardiovascular functional tests (heart rate) at rest and during specific effort or in recovery period, correlated to biochemical testing of effort/its hardness (lactic acid) and intensity, allows us to assess the functional and metabolic harmony/disharmony of athletes’ body, depending on the dominant energetic systems in water polo game. Purpose: through this ascertaining pedagogical experiment, we want to present the relationship between different external and internal parameters of exercise, in order to meet the metabolic standards imposed by water polo game. Methods: bibliographic study, metabolic and functional tests, statistical and mathematical method, graphical representation. Results: application of a standard trial designed for the higher aerobic exercise capacity (VO2 max) and assessed through the parameters: heart rate, lactic acid and exercise intensity reveals the anticipation/prediction of metabolic cost. Referring to heart rate, the athlete G.S., with an average value of 205±5 beats/min., falls within the Lactate tolerance exercise zone, while work intensity (92%) is situated in the VO2 max exercise zone. The amount of accumulated lactic acid (10.2 mmol) frames the athlete’s exercise in the metabolic VO2 max zone.

Keywords: water polo; heart rate; lactic acid; exercise intensity
THE EFFECTS OF THE COMPLIMENTARY TRAINING IN COACHING
THE NON-DOMINANT SIDE IN KARATE SHOTOKAN

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Abstract. Karate is a Japanese martial art, a fight with empty hands. Etymologically, kara means empty and te means hand. Karate is composed of two parts: kata (form) and kumite (fight). Both of them have individual and team competitions. Regardless their nature, each of the competitions has techniques and basic rules according to which the referees analyse the level of the athlete and, in concordance with this, they give the point. The qualities that define the level of the sports performance are: technique, strenght, speed, balance, coordination. These qualities, from our point of view, should be developed at the same level on both left and right sides for improving the efficiency. This work proposes an objective demonstration that the non-dominant side can be trained using exercises that are specific to karate, during a complementary training. During this scientific work there were realized measurements at the muscular and neuro-muscular level too, using the Electromyography (EMG), Tensiomyography (TMG) and the Conditions Simulator. The complementary training sessions were based on neuro-muscular control exercises, which were performed on the left and right sides. The initial and final tests were realized on the arm direct kick (chokuzuki) from natural position (shizentai). The results showed an important improvement of the non-dominant side on the both measured levels.

Keywords: karate; neuro-muscular coordination; dominant side; condition simulator.
EXPERIMENTAL STUDY REGARDING ENHANCEMENT OF PHYSICAL CONDITION IN WOMEN UNIVERSITY BASKETBALL TEAMS

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Abstract. Physical training has a particular importance in the whole training process, as it provides efficiency in athletes training as well as in competition. This component of sports training provides the basis on which there are built and perfected the other components of training, as it is the starting point for the whole process of preparation. By the conducted research it is desired the improvement of physical training for university women's basketball representative teams and finding the most appropriate means to enhance the teams’ performance, as well as the athletes performance in competitions.

The experimental research was conducted using 3 groups of 12 athletes. The first group, the experimental one, was composed of female students, aged between 19-22 years old; formal basketball players on junior level, at different sports clubs. They were university basketball team members of the Academy of Economic Studies in Bucharest. The Control groups were two university representative teams of the Carol Davila University of Medicine and Pharmacy and Bucharest Polytechnic University. The athletes within the 3 teams had same demographic characteristics, fitness level and competition experience.

The experiment, was conducted during an academic year; there were a total of 7 tests that were administered, in two testing stages (initial and final).

Looking at the overall performance obtained by the experimental group, compared with the two control groups, on the 7 samples, there is a statistical significant increase of the fitness level for the experimental group compared with the two control groups.

Keywords: physical training, women's basketball, university representative teams
LONG-TERM PROGRAMS FOR LEARNING THE ACROBATIC EXERCISES ON FLOOR IN WOMEN’S ARTISTIC GYMNASTICS

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Abstract. The purpose of this paper is the development of both a long-term program for learning the acrobatic exercises and a logical-structural scheme for performing these floor exercises based on the interaction of the algorithms of the main and concrete goals of sports training of junior gymnasts of 12 to 15 years old. The following methods have been used in this research: structural-functional analysis of the results of the theoretical and practical learning and sports training; goals theory, functioning as a category of subsystems and system entirely; biomechanical methods of examination of the key elements of sports technique of acrobatic exercises; didactical principles, methods and means of learning; functional and pedagogical equations as technologies of acrobatic exercises learning; algorithms of linear-branched programming of the material to be learned; pedagogical experiment; comparison, analogy and statistics. The results of the research highlight the content of the long-term program for learning the acrobatic exercises in the case of junior gymnasts aged 12 to 15. There are also given examples of active periods of acrobatic exercises performance and the entire logical and structural scheme of operation of the macro-methods of acrobatic exercises learning consistent with the requirements of the classification program of sport training. The long-term programs, the examples of active periods of their achievement, also the processing of the logical-structural scheme of functioning ensure the effectiveness of acrobatic exercises learning within the women’s polyathlon of sports training in artistic gymnastics.

Keywords: gymnastics; floor; programmed learning; didactical technologies; performance
Mathematical Modeling of the Biomechanical Characteristics of the Dismounts Off Uneven Bars in Women’s Artistic Gymnastics

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Abstract. The purpose of this paper is to develop a mathematical model based on the use of video biomechanical analysis of the dismounts off uneven bars. This scientific approach led to the organization of an experimental study using the following research methods: Analysis of specialized scientific literature; Computerized video method, by using “Pinnacle Studio” program of video capture and processing and the “Kinovea” and “Physics ToolKit” programs for biomechanical video analysis of sports technique; Method of mathematical modeling; Method of movement postural orientation for analysis of sports technique key elements; Statistical method, by means of “KyPlot” computerized program. The research was conducted during 2012 – 2014 period and was attended by 16 athletes aged 12 to 15, members of the national junior team of Romania. In this respect 51 dismounts performed in three national competitions were analyzed biomechanically; the results of the kinematic and dynamic characteristics and the performances achieved in competitions were statistically correlated. It was highlighted the correlative linear significance of the indicators of the kinematic and dynamic characteristics of the rotary motion around a fixed point on the apparatus – preparatory movement and the rotary motion around the transversal axis of the GCG in the flight phase of the dismounts consistent with the anthropometric, biomechanical and performance parameters of junior gymnasts aged 12 to 15 in order to develop the mathematical model of the dismounts off uneven bars in women’s artistic gymnastics. The effective use of the linear statistic method in the mathematical modeling of the biomechanical characteristics and sports performances created the possibility to deepen the phasic preparation of sports training and to process more efficiently the modern didactical programs of learning.

Keywords: gymnastics; mathematical modeling; biomechanics; dismount; performance
Finding the leader of a volleyball team using the socio metric survey method

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Abstract. Some have said that leaders are born; some said that they are made, but regardless of what you believe, finding the right leader can be very important to a sport team performance. The leader can be chosen by the coach, but not always can be accepted by the team. So we believe that it is important that the leader of the team should be elected by the members of the group. Also knowing the relationships between members of the group can help in building strong connections and good group cohesion. The present study evaluates the connections within a volleyball team, establishing the sympathetic relationships, mutual choice or rejection between players. These relationships can reveal our group dynamics, structure and hierarchy, so after analyzing those factors we can determine the group leader, the marginalized individuals, group cohesion and status of each member in the team. We also tried to find out if the formal leader named by the coach matches the leader of the group and if improving the relationships within our volleyball team and finding the right leader can improve the performance of our team. The group was formed by 12 mini volleyball players, aged between 10-12, that play for CS Force Sport in the women’s national youth championship. Using the observation method, the survey method and the socio-metric test, we found out the right leader and improved group performance.

Keywords: leader of the team; group cohesion; volleyball.
MOTOR LANDMARKS OF THE UNEFS BUCHAREST STUDENTS, PRACTITIONERS OF FOOTBALL GAME

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Abstract. Current requirements of professional football game involve from the players to have a high speed in the implementation of actions carried out in attack and defense, an optimum effort capacity, the ability to effectively solve duels that they have with their opponent, taking into account the lack of space and time and the high stakes of the games that they dispute.

This study aims to highlight the correlation between motor profile of the UNEFS student practicing football game (future teacher-trainer) and the current international trend linked with the possibility to demonstrate with raised index of speed, strength, endurance and coordination, the content of this sports game.

To this purpose, we applied to our Graduate students a series of trials and tests to determine the level of expression of the conditional and coordinative capacities.

Thus, we believe that the data obtained, represented by specific graphics will help strengthen the relationship: future graduate - young football coach.

Keywords: coach; football; motor model; physical education; students; training
LEARNING THE SNATCH SPORTS TECHNIQUE BASED ON BIOMECHANICAL CRITERIA IN WEIGHTLIFTING

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Abstract. This paper is meant to highlight the didactical technology of learning the sports technique of snatch procedure in weightlifting based on biomechanical criteria. This scientific approach led to a study conducted in „Rapid” Sports Club of Bucharest, Weightlifting Department. A number of 5 athletes aged 12 to 16 years participated in this study. The following methods of research were used: specialized bibliographic study; method of pedagogical observation; computerized video method, using Physics Toolkit biomechanical analysis program; statistical method of research data processing by means of KyPlot program. The study monitored the performances of junior weightlifters during training sessions in terms of learning and improving the sports technique of snatch lift. In the biomechanical analysis there were identified, measured and evaluated the phases of snatch lift technique, there were highlighted the execution faults and the influence of the kinematic and dynamic characteristics on the technical execution. On the basis of the results obtained there were elaborated algorithmic programs for the linear-branched learning of snatch lift, using the most efficient preparatory exercises for specific physical and technical training. The use of the video method of biomechanical analysis of snatch procedure in weightlifting contributed to the more efficient learning of sports technique and to the achievement of better performances in competition.

Keywords: weightlifting; biomechanics; didactics; snatch; performance.
TACTICAL ACTIONS RULES FOR NEARLY MARKING AND FOR CLOSING THE PENETRATION OF THE DIRECT OPPONENT IN POSSESSION OF THE BALL

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Abstract. This study examines the trends in the use of action rules for nearly marking and for closing the penetration of the opponent in possession of the ball, by the players of the finalist teams (France and Qatar) at the World Championship held in Qatar. Our goal is to provide a training process for the young players in line with the development of high performance handball. The results indicate a trend in nearly marking and in closing the game space in outer barrage, used by the defenders of the French team. The tactical actions rules for nearly marking / closing in frontal linear form as well as internal (throwing arm positioning) are frequently used behaviors with the players of the Qatar team.

The process of training young players should consider the development of the nearly marking action and that of closing the game space specific to the outer barrage (in addition to the "classical" throwing arm positioning or frontal linear closures). Depending on the placement of the pivot located inside the defense, players should know specific behaviors of this rule.

Keywords: sports, handball, high-performance, defense, individual tactic action.
STUDY ON THE USE PROCESSES OF FREESTYLE SKIING AND BIATHLON BY THEIR EFFICIENCY

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Abstract. Need scientific education and training by increasing theoretical and methodological training of all professionals, cross-country skiing and biathlon is becoming more urgent as we approach a new Olympic confrontation.
Eliminating waste means conceptual and introducing new ones meet the demands of current competitions for cross-country skiing and biathlon.
The main goals of this research are:
Investigation coaches lot of teams participating in world cup competitions, about the free technique skiing biathlon and use technical procedures training and competition during the year;
Validation of landmarks (coordinates) in the energy cost and travel time of your route, using the most effective methods of free technique.

Keywords: training; monitoring; performance
ANALYSIS OF THE EXECUTION TIMES OF WEIGHTLIFTING ATHLETES COMPETING IN SNATCH EVENT

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Abstract. This research consists in using the imaging technique. Recording and measurement were performed with the AviSynth software, made up of: an electronic computer, a JVS digital camera, a tripod, a laptop, a video monitor and videotapes. In this sense, the research presents the recording and analysis of the execution times in snatch event for some top weightlifters at the European level, participants in the 2009 European Weightlifting Championships, which took place in Bucharest, Romania. The research included 10 male weightlifters aged between 21 and 33 years, from different countries, respectively 2 athletes from Romania and athletes from Poland, Croatia, Azerbaijan, Ukraine, Belarus, Slovakia, Russia and Albania, with 1 athlete each. After analyzing the research results, some aspects related to the execution technique have been emphasized, among which we mention: average execution speed for the three statutory attempts; average execution speed for each attempt; the ratio between barbell weight and execution speed. As to the achieved results, we mention the following: average score of the execution speed in the first attempt is 3.6s; average score of the execution speed in the second attempt is 4.38s; average score of the execution speed in the third attempt is 4.46s. The increase in barbell weight determines an increased execution speed. The difference between the fastest and slowest execution speed is 2.72s. Average execution speed for the three attempts is 4.14s. We mention that this study is part of a research on the execution times in snatch event, which finally aims to compare the Romanian athletes with those from other countries.

Keywords: analysis; execution time; weightlifters
Abstract. The training of gymnasts with Down syndrome must be scientifically based, at a national and international level, in order to benefit from the complex positive effects of competitive artistic gymnastics for a longer period of time and to ensure them motor progress. Teachers, volunteers, specialists, and athletes involved in this activity need constant guidance, encouragement, and practical terms of reference in the methodical, technical steps that must be followed. This study was carried out in the first and second semester of the university year 2013-2014 and the first semester of the university year 2014-2015 (with a minimum work level -1 training per week), on a group of 12 adult gymnasts with Down Syndrome, aged between 18-32 years. Methodical, strategic, and operational elements for training, control, evaluation and adjustment of training gymnasts with Down syndrome on the parallel bars routine-level 1 were checked and confirmed. The experiment and statistical analysis confirmed actual values of correlative parameters needed in training by means of 4 tests of general physical preparation, 3 tests of specific training and 9 tests of technical preparation which measure the quality of execution. The research data represents a valuable reference model by offering scientific training on the parallel bars – level I for gymnasts with Down syndrome.

Key words: artistic gymnastics - Special Olympics; gymnasts with Down Syndrome; parallel bars - level 1; training methods; operational systems.
Positive effects in Competitive Baton Twirling – terms of reference for training and monitoring

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Abstract. Competitive Baton Twirling is a new discipline in Romania. It has been developed through two organizations: MBTA (Cheerleading Baton Twirling Association) and A.M.R. (Romanian Cheerleading Association) which gather every year, more and more clubs, both private and state organizations. Baton Twirling is one of the disciplines of this system. There is a wide range of effects on cadets or Junior Women: motor, artistic and aesthetic. The study of choreography performed by “Euritmic” group from Children’s Club in district 6, Bucharest, trained by coach Adela Popescu, formed by 12 students aged between 12-15 years, including 9 coordination, speed and safety tests and 10 tests for control of technical execution, revealed a part of these complex, positive effects of practicing this sport and some terms of reference which can be used in the training and monitoring process. Intermediate results confirmed their importance and strategic value. The performance globally obtained confirmed the efficiency of the tests performed using different methods such as the number of spins in 30 sec for reaching higher speed and execution velocity as well as the efficiency of the tests “3 out of 3”; “5 out of 5” or “10 out of 10” spins to achieve stability, safety and precision of execution. All these assure the base structure in monitoring and the qualitative support in choreographing routines for competition.

Keywords: baton twirling; coordination; safety, speed; control of execution.
BIOMECHANICAL ANALYSIS OF "FREE (AERIAL) WALKOVER FORWARD, LANDING ON ONE FOOT" (FORWARD DANIOLOVA) ON BALANCE BEAM

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Abstract. Acrobatics is the oldest gymnastic activity and the balance beam apparatus with its structure is part of it. For a very high level of preparation of the women's balance beam, it is compulsory to a morpho-functional integrity of the musculoskeletal system, a good joint mobility and muscle elasticity, and a very good neuro-muscular coordination. The element "Free (aerial) walkover forward, landing on one foot" (Forward Danilova) on balance beam, is an acrobatic element dynamically, classified in salto group that is found in most integral exercises to the balance beam and/or floor exercise and may be presented in many forms. The biomechanical reason is that the gymnast can perform the elements in easier conditions. Thorough analysis of the biomechanical data allows more detailed conclusions outline, such as those related to the kinematic and the dynamic errors, which leads to and causes other errors. Through these examples, I want to highlight the usefulness of kinematic biomechanical analysis, which covers both analytic interpretation for finding the errors and analytical mode to direct the gymnast, what to do to do it right.

Keywords: artistic gymnastics, biomechanical analysis, balance beam.
STUDY REGARDING THE RELATIONSHIP BETWEEN COORDINATION AND PERFORMANCE CAPACITY IN BADMINTON

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Abstract. First appeared at the Olympic Games in Munich 1972 as a demonstration sport, badminton has the ability to attract a large number of practitioners because of the ease with which a beginner can perform ball exchanges with his/her partner. The role of the coach is to use the motivation to make the beginners progress. Designing effective training programs for junior badminton practitioners aims to provide individual evolution opportunities regarding the sport specific techniques and tactics. The aim of our research is to identify means of personalized intervention that will increase the performance capacity in badminton. Evaluation of techniques used by athletes showed an increase in the number of excellent executions between the two tests and a decrease in the total number of executions. This is nothing but an increase in the quality of the techniques used. The results achieved by the 26 athletes highlight that applying an optimized training program through means of developing the coordinative capacity has led to an increased capacity of performance in juniors, ranking them among the top athletes in the national championship at under 15 and 17 ages.

Keywords: badminton; coordinative capabilities, performance, juniors;
CURRENT ASPECTS REGARDING THE DEVELOPMENT OF
CHOREOGRAPHIC ROUTINE IN HIGH PERFORMANCE AEROBIC
GYMNASTICS

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Abstract. Having in perspective a general matrix of conceiving a piece of choreography, this paper explains a
personal vision in composing the design of the routines for the Romanian aerobic gymnastics senior team, starting
2012 till present. This exploration process involves a logical sequence of phases where several factors complement
and reinforce one other: the FIG Code of points, the gymnast evaluation, the characteristics of the competition, the
structure of the choreographic composition, staging the choreography and potential changes/improvements of the
choreographic design.

Staging the choreography applies after the inventory of all these factors, here being included: choosing the musical
theme, selecting the technical difficulty elements, distribution of these elements on the competition area, setting up
the musical plan, building interaction among the steps sequences, transitions and difficulty elements and finally,
choosing the lifts.

The existence of the six competition events requires a various choreographic mapping, whose quality is perceived at
both visual and kinaesthetic levels, in a particular manner for each of them.

The effect of this vision in designing the gymnastics routines has been a continuous enhancement of the artistic
value and also a new, refreshing choreographic style for the Romanian team, which was positively noticed and
appreciated by specialists and judges, at the world class competitions in the last four years.

Keywords: performance; aerobic gymnastics; choreography
INVESTIGATION ON THE EXECUTION TIMES OF WOMEN WEIGHTLIFTERS IN SNATCH EVENT

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Abstract. This research is part of a wider study that aims to investigate the weightlifters (of both genders and categories), as regards certain moments that refer to the analysis of execution times characterizing the weight lifting styles. In this paper, to achieve the proposed purposes, there were selected nine world-class women athletes on the occasion of the 2009 European Weightlifting Championships that took place in Bucharest, between 6 and 12 April, at the Polyvalent Hall. The nine athletes selected for our study were from different countries, respectively Ukraine, Belarus, Greece (with two athletes each), France, Albania and Romania (with one athlete each), they being aged 19 to 28 years.

Keywords: investigation; execution time; women weightlifters
STUDY REGARDING BALANCE, AT 9-10 YEARS OLD GYMNASTS

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Abstract. The purpose of this paper is to determine the initial level of the two types of balance (static and dynamic), with a major contribution in achieving the athletic performance. The main objective is to assess the balance at 9-10 years old gymnasts. The dynamic balance determines the performance in the flight phase and, it is specific to women’s artistic gymnastics, at balance beam. The static balance is used to maintain the landing. For the dynamic balance, to determine its expression level there were used the Bass and Matorin tests, and for the static balance, there were used the Flamingo test and the test of maintaining the landing position on the balance board, with the eyes closed. The study was conducted in September-October 2014, during training in the following sports clubs gymnastics halls: CSS3 Steaua Bucharest, CSS2 Bucharest and Dinamo Bucharest. The study subjects was 21 junior III gymnasts, aged 9-10 years old, legitimized at those three sport clubs from Bucharest. The research methods used, were: bibliographical study, observation, statistical and mathematical method and graphical representation. The obtained sport results are the following: at the Matorin Test, for the right-turning jump, the mean was 315 degrees, and for the left-turning 305 degrees; at the Flamingo test, the results mean was of 11,43 imbalances; the mean of the obtained points for the Bass Test was 60,24 points; and at the test of maintaining the landing position on the balance board, with the eyes closed, the mean was 26,05 seconds. After calculating the coefficient of variation, there is highlighted that the homogeneity of the group is moderated in relation with the tests: Matorin, Flamingo and Bass. As for the test of maintaining the landing position on the balance board, the group is not homogeneous.

Ana-Maria GAVOJDEA Keywords: balance; artistic gymnastics; Matorin test; Flamingo test; Bass test; balance board.
THEORETICAL BACKGROUND AND PRACTICAL APPLICATIONS OF THE PHYSIOLOGICAL MECHANISM OF POST-ACTIVATION POTENTIATION

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Abstract. Post-activation potentiation (PAP) is a mechanism that gained interest in research during the past years. This is due to the fact that several studies use this physiological mechanism as a tool to improve athletic performance. This review will describe the basic principles of PAP and how exercise can influence the existence and magnitude of PAP. As definition, PAP is the phenomenon of increased force or twitch output that occurs after a high-intensity voluntary or evoked contraction. Although PAP is assumed to occur within the muscle due to the increased phosphorylation of the myosin light chains, several other factors can influence its appearance. The fact that fatigue counteracts the level of PAP, muscular as well as neural properties of the neuromuscular system contribute to the final outcome, despite the fact that PAP is mainly a mechanisms that is attributed on changes in muscular level. During the past 5 years our research group has examined in depth central and peripheral mechanisms that influence performance under the co-existence of PAP and fatigue. Numerous techniques combining the application of electromyography, electrical stimulation and force recording are briefly presented and discussed with emphasis on the practical aspect of interpretation on athletic performance. Using such techniques, some of the recent findings of our research group are presented, giving an insight in the PAP effect immediately after a contraction, or after series of contractions and the effectiveness of long-term combined training programs.

Keywords: post-activation potentiation; physiology; isometric; training
EXECUTION SPEED OF SPECIFIC KARATE-DO PUNCHES AND KICKS IN PEOPLE AGED 30-60 YEARS, AS AN INDICATOR FOR THE QUALITY OF LIFE

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Abstract. In order to achieve the objectives of the research, we designed a training program specific to people aged between 30 and 60 years, necessary to increase the execution speed of karate-do punches and kicks. The training schedule took into account the bio-psycho-socio-motor particularities of each participant in the program. There were applied specific preparation means, which were divided into preparation cycles. The topic of this paper is part of a broader research that aims to highlight some indicators of the quality of life and to show how these indicators can be improved by the practice of karate-do. Ten subjects with ages between 30 and 60 years were selected for this research, and all of them properly responded to the applied methods. The experimental research used video records and speed measuring performed with the aid of special software. All participants responded very well to the proposed training program. The research results show a significant improvement of the indicators measured by us. As a conclusion, when choosing to practice a physical activity during the adult age, one must take into account some important factors that could determine the capacity of an individual to improve certain indicators of the quality of life.

Keywords: speed; kicks; karate-do; quality of life
MODALITIES OF USING THE INFORMATION PROVIDED BY THE STATISTICAL PROGRAM CLICK AND SCOUT FOR IMPROVING THE OUTSIDE HITTERS SERVICE EFFICIENCY IN VOLLEYBALL GAME

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Abstract.

Problem Statement
The research aims to create and structuring the training programme in sport, depending on the information provided by the program Click & Scout, in order to improve the learning process in volleyball.

Purpose of Study
The aim of the research consists in using the statistical information offered by the software Click and Scout during a volleyball game, or from a longer period, which may facilitate the provision of technical and tactical information about the efficiency of service for the outside hitters.

Methods
The research was carried out over a period of 4 months (December 2013-April 2014), along the second phase of the National Volleyball Championship. The two complexes of exercises have been used on all the players of the team, but we monitor only the player TR, and they have taken place in the two morning workouts designed for service-receive, with a view to improve the service statistical parameters between the first phase and the second phase of the championship.

Findings and Results

Service/Percentage:
- Efficiency: in the first phase of the championship the media of efficiency was 33%, and the second phase was 45%;
- Errors: in the first phase of the championship, the percentage of errors was 3% and 6% in second phase;
- Positive: in percentage of positive points in the first phase was 26%, and in the second phase was 18%;
- Perfect: in the first phase of the championship was 3% and 8% in second phase.

Conclusions
Bearing in mind that the results of the efficiency between the first phase (33%) and second phase (45%), our research hypothesis is confirmed, and the two complexes of exercises bring something new from this point of view.

Keywords: Volleyball; Statistics; Receive; Service.
Comparative study on the efficiency of women tennis players’
first serve at Australian Open 2014 and 2015

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Abstract.

Problem statement. Women’s tennis is focused now on increasing the fixed phase. The fixed phase is regarding the serve and the return of serve. Therefore, tennis coaches are working on finding new methods to increase the efficiency of this phase. The alternative phase, meaning every stroke after the return, is well developed for the majority of women tennis players. Thus, the fixed phase might be the clue of the next level in performance tennis.

Several specialists described in literature the efficiency of the tennis serve. The risk assumed by the player during these shots was placed at the heart of this strategy.

Objective. In this paper we intend to compare the efficiency of the first serve and winners after the first serve of women tennis players at the Australian open 2014 and 2015. We want to underline if the efficiency of first serve is on a high level at the beginning of a competition year and if this aspect was developed from 2014 to 2015.

Methods. This study used specialized documents and the method of statistical analysis of data. The data were provided by the Australian Open statistics. Variables taken into consideration were the effectiveness of the first serve (the ratio between the number of successful service in total effectuated services) in 45 games in the 2014 and 2015 Australian Open tournament, and the efficiency of winning a point after the serve (the ratio of points won in total returns after the first serve).

Keywords: tennis efficiency; first serve; serve strategy; women tennis players; WTA Grand Slam tournaments
Abstract. Problem: Puberty age is considered the age of the first performances. Due to the mobility of nerve cortical processes, of their functional ability, takes place the rapid alternation of excitation and inhibition, in the motor areas of the cortex, fact which ensures the synchronising the contraction and relax of muscle groups with contradicting actions, the right answers to excitations. So the physical training has to be adapted to different age categories applying methods and manners proper for these categories.

Purpose: The purpose of this research is optimising the training process of volleyball players in order to improve the specific and general resistance.

Premises Study: By using methods, techniques and specific manners, adapted to particularities of junior ii players, will be accomplished the intended goals and consequently will improve the quality of motor resistance, specific to volleyball game.

Research methods: Have been used the following research methods: bibliographic documentation methods; observation; motor test method; mathematical-statistic method; graphic method.

Discussion and conclusions: By the end of this period, after reaching age 15, it can be paid a special attention to the development of general resistance and specific resistance in speed regime, is made an individualised training for setters - speed in resistance regime and for spikers - resistance in jump regime. On the background of general training, is made a specific training. In the volleyball game, for each training period, has to be set also the methods complex. Their percentage depends on the training period, players’ particularities, main goals, etc. The selected ways for accomplishing the goals have been efficient, well dosed, fact highlighted by the progress obtained and also by the quality of technical procedures executions.

Keywords: specific resistance; juniors, volleyball, game.
Abstract. Circadian rhythm is an endogenous biological process/cycle that repeats any 24 hours (+/- 4hrs). It is a biochemical, physiological and behavioral cycle present in animals, plants and cyanobacteria. In humans due to circadian rhythms sleepiness does not arrive as the day progresses/goes on; the need to sleep follows a cycle when body is ready to sleep or awaken at various times during daytime. Circadian Rhythms oscillations/modifications could change performance capacity, for a short period of time when traveling Transmeridian, East or West, crossing Time Zones, to participate in high level competitions such as The Olympic Games, World Cup, World Championships etc. This circadian alteration is called „Jet Lag” or medically referred as Circadian Dysrhythmia. Due to a sudden change of sleep time a quick adjustment is needed. This change might install fatigue which is a major factor that might hamper athletes to perform to their full capacity. Based on a real biological effect sports’ history notices that the best performances occurred in early evening between 19.00hrs and 23.00hrs. Better performance and less adverse results are obtained when the environmental conditions are going to improve, than to worsen during the competition.

Keywords: capacity in sport performance, fatigue, circadian rhythm
RESEARCH REGARDING OPTIMIZATION OF AN ATHLETE'S MOTIVATION LEVEL IN ATHLETICS JUMPING EVENTS

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Abstract
Problem statement: This research provides a model for the operationalization of psychological training for an athlete in athletics jumping events, obtained by means of a case study, realized within a 3-year experiment.
Purpose of research: Optimization of an athlete's level of motivation through the operationalization of their psychological training for the purpose of maximizing the level of performance achieved by the athlete.
Methods: The research was carried out using specific techniques, based on quantifying motivational levels in order to identify global motivational force (GMF), determining the instrumentality of general motivation (GMI) and the instrumentality of motivation (MI) by motivational factors, which reflect the independent variables of motivation, these generating objectives in the optimization of psychological training.
Results: Quantifying the motivational level of an athlete revealed to us the sensitive differences between the values of the athlete (7.35) and those of his trainer (6.85), in his perception of the athlete's motivational structures. Based on the values identified, regarding the instrumentality of general motivation (GMI) for the athlete O.M. and taking into consideration the evaluation of the athlete by his trainer and the ranking of each motivational factor, we were able to create objectives for psychological training.
Conclusions: The results recorded throughout the research show an ascending curve in the GMF values of the athlete, from 7.35 to 8.57, values which signify a motivational profile with increased tendencies towards a higher level.
Applying this strategy with regards to optimizing the motivational level of the athlete, through operationalizing his psychological training of the athlete (OM), leads to an improvement in both GMI and GMF values.
STUDY ABOUT THE IMPROVEMENT OF MOTOR AND FUNCTIONAL POTENTIAL IN CHILDREN AGED 6 TO 9 YEARS USING THE MEANS OF ATHLETICS

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Abstract. We are being witnesses of a phenomenon involving a decrease in the average age of Olympic and World champions and, implicitly, a new trend of sports debut at an early age, because achieving performance at the world level requires at least 8 years of training. Globally, there is a tendency to start selection at younger age in most sports branches, which has determined a new perspective in athletics too, as regards the debut of selection and instruction. Because the athletic performance supposes a long period of preparation and a high volume and intensity of exercise, the age of initial selection is recommended to decrease up to 6-7 years, so that a gradual, progressive development of the systems is ensured and thus the biological factors necessary to performance can be raised to a superior level. Obviously, there have been and still are enough controversies related to decreasing the age of debut in athletics. In this sense, the present study aims to investigate the possibilities of improving the motor and functional potential of children aged 6 to 9 years using the emulati ve-playful athletic means. The study was conducted in the school year 2012-2013, at the Elementary School no. 190 of Bucharest, on classrooms with the athletics sports profile. To assess children’s motor and functional potential, functional measurements and motricity trials were performed during initial, intermediate and final testing. Analysis of the processed results has revealed an improvement of the motor parameters in children aged 6 to 9 years, but not of the functional parameters.

Keywords: motor potential; athletics; motor qualities; early training; pre-puberty age
CONTEMPORARY TRENDS IN CHOREOGRAPHY – POTENTIAL FOR ENHANCING THE ARTISTIC PREPARATION IN RHYTHMIC AND AEROBIC GYMNASTICS

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Abstract This paper intends to bring new insights for optimizing the training process by conceptualizing and building an argument on the need to analyze the significant trends in modern and postmodern dance, in order to pick relevant statements, visions and means to be applied in different gymnastic sports preparation. Coaches and choreographers working in rhythmic, artistic or aerobic gymnastics need to have a deeper understanding of dance as a fundamental form of human expression, which, in different formulae, can be transferred into the sport arena.

Taking into consideration the current literature as well as the practical experience of some Romanian experienced coaches, we can assume that ballet is an indispensable form of training for the gymnasts, while modern and postmodern dance is a precious source of inspiration for choreographers, specifically due to the dances fusing styles, visions, cultures and genres discussed in this paper.

The iconic works of choreography defy or utilize gravity, balance energy and power, design perfect lines and volumes integrating the music, all these elements being equally important in artistic sports. Empowering the gymnasts to reach a higher understanding and control of their bodies derived through ballet and dance experiences is a task that coaches should undertake, so that every limb or muscle to be vibrantly present and able to express a wide range of emotions.

The paper designs a structured model to explore the contemporary dance, obviously suitable for further developments, so that artistic preparation follows new approaches and emphasizes a new, fresh stylization of movements

Keywords: artistic preparation; gymnic sports; choreographic trends
Abstract. This paper presents a ranking scheme of the preparation means of the high performance athletic training, of optimizing the work scheme by applying the Taguchi technique and checking of the optimal conditions to apply it. The purpose of the study was to determine the preparation characteristics for one athlete C. D. (member of the race walking national team) under the circumstances of applying a model designed according to the Taguchi technique and through assessing the benefits of this technique, which should allow its application this to the other members of the team as well. The first part of the paper presents the reasons for choosing this technique and the way it is used within the athletic training. The athletic training is regarded as a system upon which more disturbing factors activate. The Taguchi technique is the only approach that allows the optimization of the system within the real context, when the factors activate, thus the technique being appropriate for the athletic activity when these factors cannot be eliminated. The custom training schemes for C.D. were designed and then these schemes were graphically transposed explicitly and unitary in order for the technique to be implemented. The experimental training model was constructed and the training sessions were conducted according to the requirements.

Keywords: experimental model; Taguchi; ranking; implementing
Abstract. The paper presents the second part of preparing the athletic training using the Taguchi technique, that of the experimental research within it. For athlete C. D. the main training means and their limit values were set. The experiment consisted in the athlete's training for 25 days with same value of factors, as training means. The paper presents the development of the training as experiments, and the calculated values, the average, the variation, and the consistency of the results achieved in the trials, calculated in MS Excel, the effect of the training methods over the measured value (performance) and over the result consistency ratio. The training methods that have the largest influence over the athlete's training are pointed out. An improvement in the athlete's performance in the experimental year is obvious. The experiment defines the optimization of the athlete's training that has been the object of the study. The results are only relevant for her and can represent a foundation for her future training. In the case of the athlete that was the subject for this study it was determined the order of importance of the training means (factors) which influence the results of the trials.

Keywords: average; versio; performance; performance consistency; limit values.
THE IMPORTANCE OF PHYSIOLOGICAL ADAPTATIONS IN THE
COMPETITIVE SUCCESS OF HIGH PERFORMANCE ATHLETES
ROMANIAN JUDOKA

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Abstract. The strong link between physiological adaptations of Romanian judo athletes who are preparing for high performance and the technical skills of the athletes, is often difficult to determine and assess. Judo is a sport in which strategy and technique are dominant in obtaining performance, while the physiological characteristics and their parameters form the basis on which the judoka athlete builds his technical performance and individual tactics. The research subjects are components of judo Olympic teams from Romania, male and female. Methods of assessing anaerobic and aerobic exercise capacity are used. The research results on the effects of adaptive anaerobic efforts capacity allow emphasizing the ability on short, intensive, but with maximum expression of muscle strength, for this type of sport. The papers conclusions demonstrate the importance of adaptive effects that occur in the athletes who were investigated, regarding the efforts of anaerobic and aerobic effort capacity as an effect of intense training, specific for competitive strain, during a judo match, especially during overtime training in those cases where the final decision was not taken in regular time - five minutes. Top Romanian judoka athletes, are characterized by high values of muscular strength and power, especially in the superior parts of the body (Nurkić, M., Bratić, M., Radovanović, D., & Bojić I. 2009). Ideally, the judoka athletes should maintain an optimal ratio between physical preparation and technique, through an optimal combination of technical and physical shape. Maintaining the optimal ratio between the trainings components and the physical preparation, ensures the most effective outcomes for obtaining high performance.

Keywords: Judo, training, physiological adaptations, high performance
Abstract. Saudi football is in continuous development and in a constant race against time, in order to obtain resounding results in a short time. Therefore, the investment is staggering sums, which often exceed the budgets of many football clubs advanced tradition.

Pressure results lately imposed a crystallization of a new specialization in technical personnel teams that tactical analyst. The team preparing for the next game can be done modeled according to the characteristics of the future opponent.

Customizing this idea in the Olympic team of the club Al Hilal Saudi, we aim to determine the role and influence in obtaining specialized tactical analysis results.

I should mention that in the championship 2014-2015, served as tactical analyst previously mentioned club and coach of the Olympic team.

Through this paper I intend to determine which is the intake tactical analysis in obtaining the results, during the tour championship, 2014-2015 edition, in the Olympic team of the club.

So I decided to concretely determine what is the link between scouting, analysis tactics, training and official game result.

Our work is based on the analysis results preparation games and their comparison with official games, as follows:

Games training supported under the following conditions:
- No opportunity to study beforehand opponent - "Without scouting";
- Specific training, but without the possibility of tactical training model;
- Team composition and preparation of the game - "the blind";

Official Games held under the following conditions:
- "With scouting";
- Training modeled on the basis of the model provided by game scouting report;
- Team composition and preparation of play depending on their characteristics and value of the opponent players;

Keywords: training ; tactical analysis ; game ; results ; scouting
EFFECT OF AEROBIC TRAINING ON VENTILATORY THRESHOLDS, AEROBIC AND ANAEROBIC THRESHOLDS IN RECREATIONAL ENDURANCE ATHLETES

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Abstract.

Purpose: To determine if aerobic training will affect aerobic capacity, as well as anaerobic threshold, minute ventilation (VE), ratio of expired carbon dioxide to oxygen utilization (VCO₂, VO₂).

Methods: The research methods used were: bibliographic study, observation, Bruce protocol with the computerized assessment of expired gases.

Three recreational athletes were tested for basal VO₂max and data were used to determine their first (VT1) and second (VT2) ventilatory threshold, VE (L/min), VCO₂/VO₂ (%).

The intervention consisted of a 2-month period of aerobic training focused on building volume at 65% VO₂. Exercise volume was controlled across the 2-month period by varying duration and frequency. Intensity during exercise was controlled by having subjects monitor HR to stay within targeted HR zones. The first 4 weeks consisted of a volume of around 300km (65% VO₂max), and for the second 4 weeks, volume increased to around 380km (65% VO₂max).

After two months of training the VO₂max, VT1 and VT2, we found significant improvements in both ventilatory thresholds, and also in VE, VCO₂, and VO₂.

Results: VO₂max did not improve significantly, but there were improvements in all three subjects in their VT1, VT2, VCO₂/VO₂, and VE.

Conclusion: When exercise volume is controlled and individualized based on VT, adaptation to training improves both VT1 and VT2, the subject performing no anaerobic activity over a period of 2 months.

Keywords: aerobic capacity; ventilatory threshold; adaptation to aerobic training
Abstract. The current stage of sports development, on the organizational level, seeks to create or maintain a significant number of special training units for children and juniors: school sports clubs, junior sections of the sports clubs, classes with physical education program in middle schools and high schools, national Olympic centers for junior training and, not least, private clubs. Presently, in Romania, we can notice an increase in the number of sports clubs with basketball activity, which actually does not mean an increase in performance. In this study, there are analyzed, in a quantitative perspective, the contributions of sports clubs with basketball activity to the national teams’ performances achieved in the last five years, following their participation in European competitions. There are examined official data regarding the number of sports clubs affiliated to FRB (Romanian Basketball Federation), the number of counties where the teams ranked on the first four places at the final tournaments, in the 2011-2014 period, were coming from and the number of athletes selected from each county to participate in the European Basketball Championships between 2010 and 2014. The collected information provides a diagram illustrating the spread of sports clubs and their performances at junior level in Romania.

Keywords: performance; basketball; system
CONTRIBUTIONS TO METHODOLOGICAL DEVELOPMENT OF SPECIFIC FORCE TO INCREASE PERFORMANCE IN SPRINT

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Abstract. Performance gap between the top European/world athletes and components of the national Romanian sprint is caused by methodological issues in conducting training. Determination of objective indices of speed, strength, power, speed and runners to their monitoring in the annual cycle of training, can cause performance optimization in the sprint.

Purpose of Study. Determine and monitoring the development of muscle power level by objectifying force parameters in relation with specific speed during annual macrocycle determines ensuring proper individualized training explosive strength and thus optimize performance in sprint tests.

Methods. For research hypotheses were used in the system: historical method, pedagogical experiment method, case study method and statistical and mathematical tests.

Findings and Results, and Conclusions. To properly prepare methodological guiding force-velocity / power experimental research subjects, seniors, voters speed was determined as indicators of speed, explosive strength, power and strength of their power two categories of tests: 8 samples for evaluation specific field: 50m asp, Tsfe, Psfe, Psfe dr, Psfe stg, Ds 5 steps, 100m skip steps and G. Bosco and 5 samples of the Protocol: Squat Jumps (SJ and SJbw); Countermovement jump (CMJ); Continuous Jump (SJC and CJbref); Continuous Jump (CJB 0-15s); Continuous Jump (CJB 15..60s).

Elaboration of specific physical training program took into account the level of these indicators in the initial testing of action research subjects, its implementation was carried out during a year of preparation and the results analyzed as case studies have confirmed the hypothesis issued.

Keywords: speed; power; performance.