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Prof. Bogdan Czabanski’s Award Competition of Scientific Publications of „Didactic Physical Education”
DISSERTATIONS AND ARTICLES

Jerzy Januszewski, Edward Mleczko
The Young Footballe’s Fitness Structure Focusing on the Factor Analysis

Introduction. The changeable structure of motor fitness during the process of sports training of children and youth has been the subject of numerous research [1, 2]. They were carried out on cross-section material what can limit an ability to draw certain conclusions about revealing selected biological regularities. This fact influences negatively the value of criteria and norms used in the children selection for record-seeking sport, which are based on such observations.

The aim of the work. In the continuous research, conducted in the sports school with a football profile, the authors attempted to find out whether the changes of hidden predispositions and motor abilities appear during the training process which constitute the foundation for the development of technical and tactic fitness against the background of the similar research results carried out in the comparative groups of non-training individuals?

Material and methods. The measurements of the basic somatic traits, anthropometric indexes, VO2 max × kg –1 and motor skills were taken into consideration. The observations were made every six months for three years. The comparative group consisted of the peers with attending randomly chosen schools – (comparative group).

Results. The conducted factor analysis revealed the fact that there are minor quantitative differences of the motor structure between training and non-training groups during a three-year observation period. In both the sportsman group and less active physically boys the number of separated factors did not increase as well as the set of variables taken into account.

Conclusions. It can be concluded then, that the applied way of sports selection as well as the process of their adaptation to a specific training ballast might have been the causative factor of the structure efficiency specification among children from sports schools. In this connection, they cannot deny the thesis that a talented sports masters can be recognized already as a child. Still, the ways of such a selection seem controversial.

Krzysztof Krupecki, Nijole Jaszczanin, Jan Jaszczanin, Pawe Cięszczyk
Optimization of Training Load in the Process of Rowers’ Preparations for the Olympic Games

The purpose of the work. Determining physiological indicators and special physical efficiency of rowers – members of Olympic team – and implementation value of these indicators in optimization of individual training process in a cycle of preparations for the Olympic Games.

Material and methods. Research material constituted of 7 rowers, members of the Olympic team, realizing the long-standing cycle of preparations for the Olympic Games

Results. In observed training cycles the following factors were taken into consideration: anaerobic metabolism threshold (AT), pulse indicator at AT level (HRAT), power indicator at AT level (W, W/kg), average power (W) and relative power (W/kg), duration of carrying out the „maximal test”, maximal oxygen assimilation (VO2max, VO2max ml/min/kg), lactate concentration (La mmol/l) and maximal power of lower and upper limbs. Individual power indicators ranged from 295 to 346 W (3,31-3,89 W/kg), average power of „maximal test” ranged from 412 to 469 W (4,63-5,21 W/kg), VO2max – from 5,39 to 6,29 l/min (59,3-68,3 ml/min/kg, lactate concentration – from 14,1 to 18,3 mmol/l, duration of carrying out the „starting distance” – from 6:001,0 to 6:018,0 min, strength endurance (7 minutes – 50% of maximal strength) – from 5335 to 7110 kg.
Conclusions. Results of preliminary tests were applied to select the appropriate individualized training programme and its intensity.

Krystyna Górniak, Helena Popławska, Agnieszka Dmitruk
Strength Abilities in Girls and Boys with Scoliosis Functional

The aim of work. The study addressed the evaluation of strength abilities of children and youth with lowdegree scoliosis compared to their peers with correct body posture.

Material and methods. Investigations were carried out in the years 1998 - 1999 and covered 1527 rural girls and boys aged 10-19 years. Body posture was assessed with orthopedic examinations that enabled separating a group of girls and boys with correct body posture and a group of children with functional scoliosis. The strength abilities of the subjects was evaluated with the Eurofit test.

Results. In the case of girls, better results of the explosive strength and trunk strength tests were obtained by the girls with scoliosis, whereas in the test of the static strength – by their peers with correct body posture. As for the boys, in the tests of static and explosive strength the predominance of subjects with scoliosis occurred only at the youngest age categories (10-12 years), whereas in the trunk strength test – in the subjects aged from 15 to 18 years. The results recorded were marked on centile charts elaborated for the children of the Lubelskie Province. Most of the strength capacity results of the children with functional scoliosis appeared to oscillate between 25 and 75 centile.

Conclusions. In the tests of explosive and static strength, results below 25 centile were quite often. In the trunk strength test, both in the case of girls and boys, a higher percentage of the subjects obtained results over 75 centile.

Małgorzata Łukjan, Janusz Parlak
Comparison of the Take-off Structure for Counter Movement Jump and Somersault (A Case Study)

Purpose. The aim of this research was to value the effectiveness of the take-off and tracing the changes of the take-off during counter movement jump and somersault.

Material and Method. The research was made at the Academy of Physical Education in Katowice in the Department of Biomechanics. For the exercise analysis three gymnasts specialize in acrobatic jumps were chosen.

The following were used:
– cinematography,
– piezoelectric dynamometry.

Results. To know the structure of the movement of the jump and somersault in both exercises, the movement track of the center of gravity, the change of angles in joints, reaction of the ground and the turn of the body have been analysed. On this ground the mechanism of the body turn has been specified and the effectivity of the takeoff in both kinds of jumps has been observed. The low effectivity of the somersault take-off is a result of the loss of the jump height when giving the body an appropriate quality of the turn to make a full turn.

Conclusions.
1. The main and decisive quality of the somersault is technicity and vivacity.
2. To be effective during the take-off one must have an appropriate turn with the best loss of body center of gravity (BCG).
3. During the somersault the body turn is connected with a big range and velocity of unbending the hip joints. This is followed by not quite fully unbending the knee joints of a less range and velocity.
4. Although the jump is less high, one needs to use more kinetic energy connected to giving your body a rotary motion.
5. To examine this movement it may be useful when perfecting the technique of somersault methodology.

Paweł Cięszczyk
Attempt to Comprehensive Analysis of Selection for Sport on the Basis of Team Sports

Introduction. Preliminary selection is one of the most important factors that affect effectiveness of sports training. Unfortunately, the real sporting talents are very rare. Moreover lack of consistent and uniform programme of picking out young talented people may cause the loss of the most predisposed ones which questions the point of sports training for professional sport altogether.

The purpose of the work. The purpose of this work is an attempt to comprehensive evaluation of selection process for sport based on an analysis of given somatic features and motor abilities.

Material and methods. Research material consisted of pupils at the age of 10 selected to practice particular sports disciplines in sports classes in Szczecin (n = 97). A control group consisted of boys at the same age attending primary schools, but not selected for sports training (n = 39). A set of tests used in conducted research contained measurements of: the basic anthropometrical parameters, suppleness, kinaesthetic differentiation ability, reaction speed, movement frequency, spatial orientation, balance keeping ability, maximal anaerobic power (nonlacticacid), fast muscle mobilization ability, strength endurance, maximal anaerobic power (lacticacid), aerobic efficiency and maximal absolute strength.

Results. Analysis of the obtained results allowed to verify validity of the tests applied in selection for sport until now.

Conclusions. Besides the authors made an attempt to evaluate effectiveness of selection methods for sports classes in Szczecin.

REVIEW PAPERS

Zbigniew Czajkowski
Energy Abilities, Co-ordination, Technique, Tactics and Psychomotor Processes in Different Stages of Fencer’s Training

The Author, basing his views on many-years of observation, practical experience (70 years of activity in fencing) and many tests, how the various component parts of fencer’s training (energy fitness, motor co-ordination, technique, tactics and psychological processes) undergo considerable changes in consecutive stages of many years lasting training process. These changes are very important and seem to be obvious and logical and yet not every coach seems to notice them. Realizing these changes and conducting the process of training accordingly enhances the efficacy and competition results. Author’s views and advice are based on fencing, but many of them are valid in other branches of sport, especially combat sports and games.
Wacław Petryński
The Problems of the Translation of Motor Control in Human

The paper presents the problems of motor (movement) control in humans with special regard to the issue of using two particular codes in this process, namely sensory and symbolic (verbal) ones. In the processes of planning and controlling the movements arises the problem of bidirectional translation of both those codes, being a specific kind of intersemiotic translation. The problems encountered by motor control specialists and translators – especially interpreters – seem to be very similar. Quickness, necessary in both the processes, needs operation with “unified” chunks of information – verbal-verbal in language translation or sensory-verbal in motor control – without arduous ascribing the information chunks expressed in one code to respective units expressed in the other one with simultaneous taking into account the rules of syntax and grammar. Here arise the questions of close attention and consciousness which slow down the translation processes under consideration. Then, achievements of psycholinguistics and translational can contribute to a better explanation of the movement control in humans as well as in animals.

DISCUSSIONS

Wacław Petryński
Elements of Human Sensory-motor Efficiency; Attempt at Ordering the Classification

The main premise of the paper is the statement that in building scientific models of reality it is necessary to precisely define the words, being the construction matter of the models. The words have to project their real designates possibly truly. Taking such premises, there were analyzed some of the Polish, English and German notions in the field of motor science. It has been shown that both the definitions given in popular dictionaries, and in specialistic ones are often not precise enough for scientific purposes. There has been proposed a classification of particular elements of human sensory-motor fitness, as well as definitions of following notions: concerning the basis of all sensory-motor acts (sensory-motor aptitudes, sensory-motor abilities, sensory-motor talent), describing particular kinds of sensory-motor acts (sensory-motor reflexes, sensory-motor habits and sensory-motor skills), as well as notions concerning the range of sensory-motor acts and possibilities of their development in the future (sensory-motor competencies, sensory-motor capabilities). There have been analyzed, too, the effective and potential aspects of human motoricity. Shown is the positive role of multilingualism in building of scientific models and resulting from it possibilities for Polish scientists (and others, whose native language is not English). At the building stage of scientific models the semantic diversity is necessary, indeed, but in the ordered region of science the descriptions should be unambiguous. There has been stressed the necessity of working out an international encyclopedic dictionary of motor science terminology.

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