

**THE ANTICIPATION OF THE PSYCHOLOGICAL
PARAMETERS BY APPLYING THE MATHEMATICAL MODEL
FOR THE SWIMMER SPORTSWOMEN**

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Key words: sports, psychomotrical, mathematical model

Abstract: In accordance with theory and in methodic of training, sports preparation aims at optimization and at the maximisation of the capacity to acquire sports performance by a long-term activity which assumes numerous means and specific techniques of intervention.

Leaving idea that psychomotor preparation must be based on the incorporation of driving and mental functions, under the influence of the adulthood of the nervous system at the age of 14-16 years, we considered perform a study of the literature of speciality with the applicability of the psychological tests in the preparation of the sportswomen swimmers aiming at development psychomotor and psychological of concerned age.

Introduction

The study of the specific literature, theoretical analysis of the data concerning the particularities of 14 to 16 years old girls, we underline that the sportswomen poses a great thinking capacity, they are able to realize the parameters established by the high performance sports necessities, modeling their personality, etc.

From the theoretical-methodical findings of the authors (P. Cerretteli, 1967; C. Ciobanu, M. Cerchez, T. Munteanu, 1972; I. Chiriac, 1975, 1989; C. Alexandrescu, 1985; V. N. Platonov, 1986; I. Dragan, 1990; N. Oprisan, D. Voinescu, 1998; H. I. Boiilie, H. I. Denis, 1998; V. Horghidan, 2000; M. Epuran, I. Holdevici, F. Tonita, 2001 and others), who tangentially or directly approached the development particularities of sportswomen, there have been shown a certain level of physical stability, a certain harmonization of the body proportions, a certain intellectual level and a regenerated capacity of observation at the age of 14-16 years old.

A sportsman makes an impression not only by his psychomotor capacities, but also by his cleverness/brightness, this being the result of an exact and fast thinking.

Material – method:

The creation of a system type of training, for a cyclic or acyclic sport takes place on the basis of the general fund of theoretical, methodological and practical knowledge, detached from the scientific research, from the experience of the best national and international trainers. The sportive performance depends on many somato-physiological, psychological and training particularities.

As follows we will present the functions set determined by the data extrapolation through the mathematical model that we proposed in order to evaluate the sportive evaluations through the set of psychological tests specific to swimming: Kraepelin test, Platonov test.

Within the Kraepelin psychological test (table 1) one can observe that the majority of subjects have a small volume but a great accuracy and react advisable and adequate to the assignments prior given. Furthermore one can observe that in the case of a great number of sportswomen an improvement of the thinking flexibility has been obtained, which has been highlighted by the prognosis established by the model.

Table 1

The difference between the real dates and the ones anticipated by the Kraepelin Test (For intelligence)

Period		Sept. 05	Dec. 05	Jan. 06	May 06
Name/forename	Age	0	3	4	8
A.A.	14	2	4	4	4
A.R.	15	4	4	4	4
C.N	14	3	3	3	3
B.R.	14	1	1	1	1
S.D.	16	4	4	4	4
V.E.	15	1	1	3	4
R.S.	15	2	4	4	4
G.B.	16	4	4	4	4
S.B.	16	3	1	1	1
C.V.	15	3	3	3	3
S.A.	14	2	2	4	4
T.A.	14	1	1	1	1

Average	14.83	2.50	2.67	3.00	3.0833
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Results:

In our research we applied the test with numbers from 1 to 30 in random order, that refers to the evaluation of attention distribution (Platonov test), where the sportswomen have to find the numbers in their natural order. Using a chronometer we got the results from table 2. One can observe a good and very good orientation and concentration at the majority of the sportswomen. So, we can assume that the sportswomen show a distribution of attention in any circumstance, which can appear in the training and competition process.

Table 2

The difference between the real dates and the ones anticipated by the Kraeplin Test (For attention)

Period		Sept. 05	Dec. 05	Jan. 06	May 06
Name/forename	Age	0	3	4	8
A.A.	14	3	3	4	4
A.R.	15	3	4	4	4
C.N	14	1	2	2	4
B.R.	14	2	2	3	4
S.D.	16	3	3	4	4
V.E.	15	2	2	3	4
R.S.	15	3	3	3	3
G.B.	16	3	4	4	4
S.B.	16	2	2	3	4
C.V.	15	1	1	2	3
S.A.	14	2	3	3	3
T.A.	14	1	1	1	1
Average	14.83	2.17	2.17	3.00	3.3760

The graphic representation shows that the approximation error is small between the real and the obtained dates by the calculation of the mathematical model.

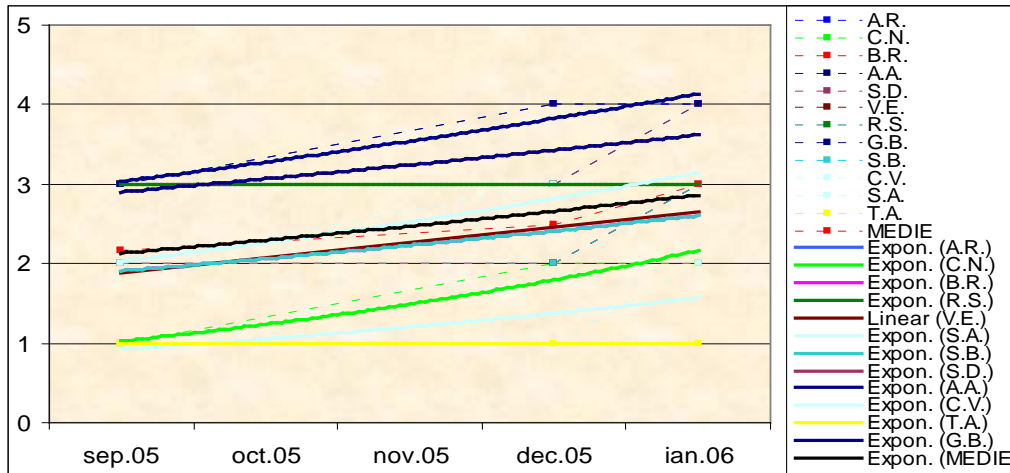


Figure 1. The graphic representation based on the data obtained by the sportsmen and of the extrapolation regarding the average at the Kraepelin Test (for attention)

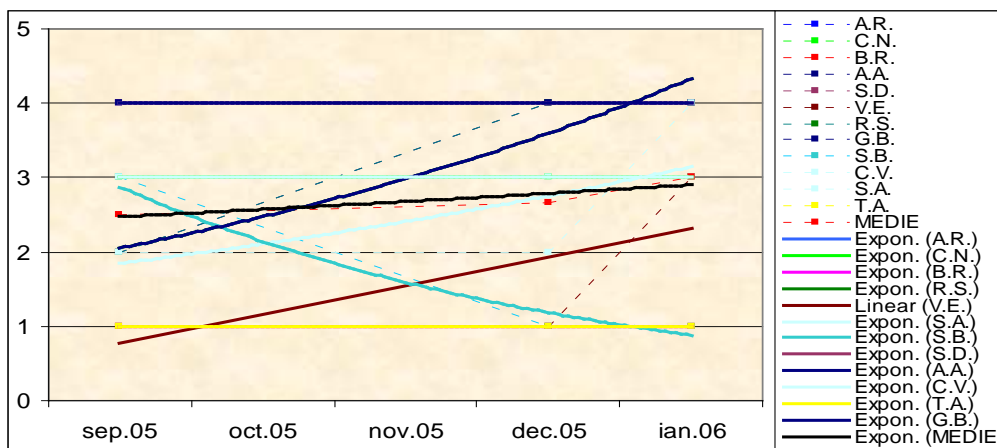


Figure 2. The graphic representation based on the data obtained by the sportsmen and of the extrapolation regarding the average at the Kraepelin Test (for intelligence)

Based on the above data we can draw some important conclusions regarding the extrapolation of values and the prediction of performances of the tested sportswomen:

- From the realized graphics, where there have been represented the linear and exponential interpolate characteristics for every sportswoman,

one can observe the satisfying way in which the exponential function approximates the obtained data

- To find the approximation function we searched for the most efficient mathematical methods for a true accuracy of the anticipation and efficiency of the psychological para Conclusions

Discussions:

- 1) Through psychological tests the flexibility of the mind, distribution of attention, orientation and concentration were proven, with great parameters at the sportswomen that were tested.
- 2) By applying the mathematical model referring at the data obtained by the sportswomen, we can acknowledge the precision and real efficiency in the annual planning of their training by their trainer.

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Titlu: Anticiparea parametrilor psihologici și aplicarea modelelor matematice la sportivele înotătoare

Cuvinte cheie: sportive, teste, psihomotric, model matematic

Rezumat: Conform teoriei și metodicii antrenamentului, pregătirea sportivă vizează optimizarea și maximizarea capacității de obținere a performanței sportive, prin activitate de lungă durată care presupun numeroase mijloace și tehnici specifice de intervenție.

Plecând de la ideea că pregătirea psihomotrică trebuie să se bazeze pe integrarea funcțiilor motrice și mentale, sub efectul maturizării sistemului nervos la vârsta de 14-16 ani, am considerat să efectuăm un studiu al

literaturii de specialitate cu aplicabilitatea unor teste psihologice în pregătirea sportivelor inotătoare vizînd dezvoltarea psihomotrică și psihologică a vârstei respective

Titre: L'anticipation des paramètres psychologiques en appliquant le modèle mathématique pour les sportives de nageur

Mots-clé: les sports, psychomotricité, le modèle mathématique

Résumé: Conformément à la théorie et à la méthodique de l'entraînement, la préparation sportive vise l'optimisation et la maximisation de la capacité d'obtenir la performance sportive par une activité de longue durée qui suppose nombreux moyens et techniques spécifiques d'intervention.

Partant de l'idée que la préparation psychomotrice doit se fonder sur l'intégration des fonctions motrices et mentales, sous l'effet de la maturité du système nerveux à l'âge de 14-16 ans, nous avons considéré effectuer une étude de la littérature de spécialité avec l'applicabilité des tests psychologiques dans la préparation des sportives nageuses visant le développement psychomotricité et psychologique de l'âge concerné.