

## MORPHOFUNCTIONAL AND PSYCHOMOTRICAL ASPECTS OF THE PUPILS FROM SECONDARY SCHOOLS

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### **Abstract:**

We ask ourselves the natural question of the importance of these particularities and the answer is simple to find: the activity of physical education and sport is not carried out at random, but it has a scientific foundation without which it is impossible to achieve the strengthening of health, the harmonious physical development, the acquisition of some motor skills necessary for various activities and the achieving of superior sports results.

The research carried out has shown that the student between 11 and 14 years old goes through a phase where growth is dynamic, where there are transformations that will eventually lead to maturity. It is the period when childhood ends and the somato-functional growth processes are accelerated.

A first aspect to be noted for this age is that of the differentiated growth regarding boys-girls, a fact that makes the two sexes become differentiated at the end of puberty (10-14 years).

According to the results of the specialists in the field, the somatic growth of students highlights the fact that they can cope with moderate efforts in terms of speed, strength and skill, with the mention that boys show greater availability to girls.

The oina game, through its characteristics, can solve these problems very well by helping children to overcome the age of great transformations successfully.

### **Introduction**

We ask ourselves the natural question of the importance of these particularities and the answer is simple to find: the activity of physical education and sport is not carried out at random, but it has a scientific foundation without which, it is impossible to achieve the strengthening of

health, the harmonious physical development, the acquisition of some motor skills necessary for various activities and the achieving of superior sports results.

In order to achieve these, it is required an activity based on the thorough knowledge of the morpho-functional and psychic particularities of the pupils in grades V-VIII.

### **Material-method**

To achieve the research we have proposed, we used the two-way documenting methods, namely: the method of studying the history of the game and the specialized literature, used for knowing the ancestors' experience in the oina field and the method of the discussions with the specialists, with the aim to know the experience and the current trends in the field.

The work can't be done without a profound documentation, accomplished by studying the specialized works of the Romanian and foreign authors.

The aim of the research is to implement a model of training at the level of the representative oina team of our school and, by using some appropriate methods and means to contribute to its efficient growth in the competitions in which it participates.

### **Discussions**

The research carried out has shown that the student between 11 and 14 years old goes through a phase where growth is dynamic, where there are transformations that will eventually lead to maturity. It is the period when childhood ends and the somato-functional growth processes are accelerated.

A first aspect to be noted for this age is that of the differentiated growth regarding boys-girls, a fact that makes the two sexes become differentiated at the end of puberty (10-14 years).

Another aspect to be considered is that when it is referred to this last segment of puberty (13-14 years), one cannot make a full distinction for the first two years.

The somato-functional and psychological particularities of the pupils in grades V-VIII, at the age of puberty that we refer to starting from 10 years old and ending with 14-15 years old, have certain characteristics due to the transformation processes to which the body is

subjected, processes which are manifested by increasing organs, body segments, weight and volume.

This process is based on cellular multiplication and it is expressed by quantitative values. These processes are present at the same time in children, but they do not develop uniformly.

Puberty brings psycho-physiological transformations with deep repercussions in terms of physical constitution. This is due to the releasing of the hypothalamic neurosecretions that reach the anterior pituitary gland and stimulate the secretion of STH and FSH and LH gonadotropic hormones with action on sexual glands.

A first aspect that is highlighted is that growth push that changes the stature and weight faster and more severely in girls than in boys, fact which makes the two sexes at the end of puberty 10-14 (15) years old become totally differentiated.

If in the first part of the puberty period (10-12 years old) a clear distinction of development is made, in the second period (13-14 years old) the processes present large variations from individual to individual. This fact makes us have a student in the 8<sup>th</sup> grade more developed than one in the 7<sup>th</sup> grade.

The transformations that take place do not mean only the increase in height or weight but also a differentiation, maturation, a metamorphosis. This increase is not continuous but in phases, more in the first part of the period with a slowing in the second, where there is already a harmonization of the ratio between the length of the limbs and trunk. The thorax that grows slowly in the first stage of 11-12 years being called "narrow chest," follows a more pronounced development at the age of 13-14 years old.

The bone system develops by increasing the bones in thickness, with increased resistance due to the accumulations of mineral salts, having an increased elasticity compared to adults, with a lower resistance compared to adults, this ossification process being a long lasting one, where it should be taken into consideration the fact that a too high load prevents the increase in height.

The muscular system has a rapid development in the first part being stretched by the growth of the bones, followed by a thickening due to the slow growth rate in the second part of the bone system, as well as the natural growth of the force.

The muscles of the upper limbs are well represented while the lower limbs are less developed.

The force of the extensors exceeds that of the flexors, the muscular elasticity is better developed, the muscular tonus also, but below the level of the adult.

The neuromuscular excitement is lower than in adults. The speed of the muscle contractions changes independently from the muscle mass and often it reaches maximum values at this age. The muscles resistance to stretch is lower, but it increases with the age of 12-13 years, fact which encourages the development of the active mobility.

The joints are still poorly developed but have an increased hyperlaxity and the ligaments have a still small resistance to traction and stretch.

The systematic practice of physical education and sport determines an improvement in somatic parameters at this age, the favorable influences on the normal growth and harmonious development of the body as well as on preventing the growth and development disorders and deficiencies constitute one of the greatest successes of this activity when applied correctly.

At the C.N.S (central nervous system) level, the lower segments at the beginning of the period are mature both morphologically and functionally. Only subcortical structures continue their morpho-functional maturation in the puberty. At the age of 14 years the C.N.S. is almost like in adults, but, at this age, it presents some particularities that need to be taken into consideration in the practice of physical education and sport as well as throughout the training process.

Thus, the great plasticity of the central nervous system is maintained, leading to the instability of the behaviour and affective states. The predominance of excitation to inhibition is still evident, but they enter a process of balancing by developing the inhibition processes.

If at first, the differentiation inhibition is poorly developed, resulting in a relative instability of concentration and difficulty in maintaining the strain of attention for a longer time, the ratio begins to change towards the end of the 13-14 year period by the predominant increase in inhibition.

Plasticity gives the children of this age an increased receptivity towards adults in acquiring information, but it is necessary a permanent repetition for knowledge to be consolidated.

The maximum hourly rates for intellectual performance for this age range between 9-11 and 16-18, and this potential reaches the

maximum on Wednesdays and Thursdays. Bear in mind that after 4-5 hours of activity it is normal for the fatigue to make its presence felt.

Regarding the actions needed to improve the more complicated movements, the executions with a greater difficulty, the development of visual and acoustic-vestibular analyzers is of great importance.

The transformations and the changes that have occurred during this period in the psychological and somatic plane are in the most intense stage. It is now that the latest increases regarding the biological growth are taking place.

This age, 11-14 years, is considered a passage because from a psychic point of view, when development is complex and contradictory. There is an enthusiasm in accomplishing the tasks by children, when the talent and the skills are enhanced.

In the vegetative sphere there are great organic and functional changes in all the internal organs. The largest and the most important changes are located in the genital sphere, which dominates the general picture of the vegetative development during puberty.

The action of the volume growth of the heart, thorax and abdomen with the development of all internal organs, blood vessels, glands with internal and external secretion is in full progress.

The development of the cardio-vascular system is slow but continuous. The volume and the weight of the heart in boys increase steadily, exceeding the girls and reaching the maximum growth rate between 13-14 years, after which stagnation occurs. The arteries and veins have a proportionally larger diameter than in adults.

Children get tired faster if they carry out monotonous activities for developing their motor skills, and therefore a great variety of content and work is recommended, and short breaks between executions are recommended. The body of children adapts more easily to speed muscle strain than to resistance muscle strain.

At this age, the unconditioned reflexes on time assessment are slowly formed and therefore, children appreciate the time intervals harder than the characteristics of the space or the degree of muscle strain.

The motor skills are formed faster at 13-14 years old than at 11-12 years old.

It is important to know some aspects of the evolution in ontogenesis of motor skills and abilities.

Speed has hereditary character with morpho-functional support, the cerebral cortex maturing at 14 years old.

Skill has biological substrate in the motor area of the cerebral cortex and the kinesthetic analyzer which matures at the age of 12-14 years so, early, fact that ensures the achievement of performance in skill sports. The body orientation in space is better at 13-14 years than even in adults. The dynamic balance improves quickly and early, so the great demands at early ages find a well-developed vestibular apparatus. The static balance has been fully evolved since 6 years. The differentiation and the reproduction of the amplitude and intensity of muscle contraction are fully evolved at 14 years.

From the above one can draw the methodical conclusion according to which the development of skill can be done early.

Strength is the quality that depends on the development of muscle tissue. It is known that the fibers of red muscle tissues favor force, a motor quality, while the white ones favor speed.

General resistance has as a biological support the capacity of the cardiovascular system. The maximum heart rate and maximum oxygen consumption mature after 19 years and between 11-14 years is in a full process of evolution.

Making an overview of the development of motor skills during this period, we can show that it is noticeable their great and fast progress. The forms of movement previously taught are consolidated, skill, the capacity of effort, speed, especially speed and skill, as well as general strength increase, the learning ability is very high. By the end of the period, almost all the indices of motor skills are in a process of growth. During this period of time, very good sports results can be recorded.

Like other qualities, the psychic ones are developed in stages, fact that must be taken into account. If at the young school age, grades I to IV, the child is characterized by excessive movement, has the power to learn the technique, but to achieve the results in practice, it is necessary to act with simple and attractive means, at this age (11-14 years), there are other problems in the first phase. The child has a greater ability to think, now being the age at which the technique can be improved. Movement must be learnt correctly, consciously, to the demonstration method adding with good results the explanation one.

A good knowledge of these anatomo-physiological and psychic features will constitute the basis for the programming of the content of all physical and sports education, and the individualization of effort, taking into account the different adaptability.

In dosing the effort, we will follow the compliance with some pedagogical and physiological principles such as: multilingualism, continuity, accessibility, grading, etc., to ensure children a harmonious growth and development, the acquisition of basic and motor skills necessary for life, such as the continuous raising of sports performances.

Concerning the effort Bompa T.O.; Carrera M.C. (2006, p.39), say that "The energy system that produces energy during a sporting activity depends directly on the intensity and duration of the activity.

The exercises and the technical-tactical actions in the oina game are one of the most efficient means of the metabolic processes, conducting the morpho-functional improvement of the body. At this age, the processes for recovery and synthesis of the energy material take place in parallel with the biosynthesis processes necessary for the growth and development of the body. So they must have the intensity appropriate to the children's age.

Bompa T.O.; Carrera M.C. (2006, p.27) states that "The human body is very malleable and it adapts to the stimuli to which it is subjected. If proper stimuli are applied, optimal physiological performance is ensured. "

From the physiological point of view, I saw how the child at this age is in the process of transformation.

Regarding the ample process of physiological transformation, from the psychological point of view, there appear some very interesting aspects which, in practice, must be exploited. Schipor D.M. and Bălan C.C (2006, p. 11), show that "At the level of psychic processes, the modifiability is closely related to the time of action of the educational stimulus."

The aspects that have appeared and from our point of view need to be "exploited" are:

- the tendency to assertion makes the student very receptive and even interested in physical education and sport, being aware from now on that this thing contributes to his / her perfection. That's why sports games and movement in general occupy the first place among the games practiced by the preadolescent;

- at this age, there is an increasing interest in the world and its phenomena. That is why the boys' interests are converging towards the kind of activity that calls for their active participation. Or, physical education and sport, which occupy once again the first place, satisfy this

trend of the preadolescent and contribute to the formation of his/her personality;

- the child's body and psyche at this age is hunted and overwhelmed by the abnormalities that occur abundantly. Considered from this point of view, the practice of physical education and sport appears as a balancing and toning therapy;

- the attraction towards "heroic" attitudes, sometimes risky, can be weighted and channeled through appropriate sports action.

Viewed from the perspective of those psycho-motric features, physical education and sport exert a positive function on the pupil of this early age, consuming the excess of energy rationally and usefully.

Epuran M. (1976, p. 19) says that "Body activities allow man to dialogue with himself and with nature. In both cases man emerges ennobled, his personality receiving a more precise contour by increasing his differentiation and assertion, through the invigorating character of self-discovery. "

According to the results of the specialists in the field, the somatic growth of students highlights the fact that they can cope with moderate efforts in terms of speed, strength and skill, with the point that boys show greater availability to girls.

The oina game, through its characteristics, can very well solve these problems by helping children to overcome the age of great transformations successfully.

### **Conclusions**

In the training of the athletes from the secondary schools it is necessary to get a better understanding of the morpho-functional and psychomotric aspects. Due to the multitude of transformations taking place in the body, as well as the psychic changes of the student in the secondary school, there is a risk of failure. Possible failures that may arise in training can be countered by the teacher. That's why, in the training of students, more attention has to be paid by the physical education teacher, in the sense that his / her tasks are more complex, starting with the selection, the preparation of the training programs on stages and periods, the careful monitoring of the evolution of each individual regarding the progress, the capacity of effort in order to avoid failure.

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