

## **Psychomotricity - a complex function to control human behavior**

*Associate Professor PhD Mihaela Ganciu  
Romania - University of Bucharest*

*University of Bucharest, Faculty of Psychology and Scientific Education, Department of Physical Education and Sport, Bucharest, Romania*

*Phone :0733 695 015*

*E-mail: mihaelaganciu26@yahoo.ro*

### ***Abstract***

Psychomotricity defines "generic, any motric action, attitude or behavior pattern that is under the influence of mental processes" basically saying that the two sides - physical and motor - can not be separated.

By its basic components, psychomotricity makes possible the pragmatic adjustment (learning professional techniques, manuals, intellectuality), social adjustment (of interpersonal communication), aesthetic adjustment (body expression techniques) and educational adjustment. Human existence can be understood as a unit in which the pshyhic and the somatic component are interconnected.

Psychomotricity, as part of applied psychology, approaches the study of motric function, and integrated and coordonated by mental functions. It's has been associated the idea that mastering the body is the first condition for mastering of the behavior.

Psychomotric actions in education are primary directed to accumulate some behaviors, which gradually build in basic components that will contribute to a more accurate representations about the movements of the body and its segments.

Investigation and analysis of coordination and balance development level of first year female students of the University of Bucharest, practicing aerobics in the academic year 2012-2013.

Highlighting the efficiency of aerobic gymnastics in comparison with the evolution of parameters investigated.

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*Keywords: psychomotricity, skills, evaluation, human behavior*

## ***Introduction***

In the psychiatric encyclopedic dictionary (Gorgos, C 1991) the term of Psychomotricity defines "generic, any motric action, attitude or behavior pattern that is under the influence of mental processes" basically saying that the two sides - physical and motor - can not be separated.

Psychomotricity is a complex function, a skill, a specific behavior that integrates and combine motric and psychological aspects related to perceptive functions, sensory, intellectual and motor development of receiving information and do proper execution of the response act. According to Lafon (quote by Stoica, A., 2004), it is the result of psychomotricity integration, the interaction of education and the development, synergy and conjugation of motric and mental functions, not only in terms of observable movements and functions, but also what determines and accompany them (will, affection, needs, impulses).

In our country, Epuran M. (1976, p.114) has been studying this problem and defined psychomotricity as "an expression of maturity and integration of mental and motric functions at the level claimed by the good functional integration of an individual in an environment".

Another definition was given by P. Arcan (1980, p. 56), showing that psychomotricity is a complex function that integrates and combines motric and mental aspects, elements that will influence the behavior of a person. Practically, the movement is not simply moving the body segments, it develops an action with a specific purpose.

The concept of the body has suffered many changes over the years. It was originally been studied psychologically, and then physiologically. In reality, the body is a complex unit, through which man is able to experience and act accordingly. The body should be viewed from three different angles including: its own interconnectivity, its connectivity with the people surrounding it, its bonding with the environment.

By its basic components, psychomotricity makes possible the pragmatic adjustment (learning professional techniques, manuals, intellectuality), social adjustment (of interpersonal communication), aesthetic adjustment (body expression techniques) and educational adjustment. Human existence can be understood as a unit in which the psychic and the somatic component are interconnected. The knowledge of your own body is the foundation in understanding your own identity, the body should not be studied separately but in relation to itself, in relationships with others and the environment .

The study of psychomotricity reveals aspects which allows the child to form a system of movements of which he can operate in any conditions, on his decision, efficiently, spontaneously and rapidly.

As a general objective, psychomotricity is regarding: the knowledge and understanding of the integrant elements, knowing the behavioral tools, mastering the basic components, in order to achieve an adequate response, the early diagnosis of disabilities, guiding the educational process that helps eliminating them or a brief diagnosis of the impairments guiding the process of reeducation reducing the negative effects.

The particular objectives followed are: kinesthesia development, perception and complex representation of motion, perfecting the capacity of movement directed to the adaptation of the demands and coordination of the body, evaluating assessment of psychomotoric potential with the relationship between biological and chronological age, development of skills, basic motoric skills and applications. (Albu, 1999)

According to L. and P. Vayer Pick (1978), Psychomotricity includes:

- a) basic motoric conduct: -eye movement coordination, static and dynamic balance and general dynamic coordination
- b) neuro-motoric conducts - muscle tone and proprioceptive sensations
- c) perceptual-motor structures and conduct, consisting of body schematics, laterality, orientation and spatial-temporal organization.

Referring to psychomotricity, De Meur and Staes (1988) have revealed the existence of relations between motility, intelligence and affection. Although A. Lapierre (1976) considered that the notion of psychomotricity is too vast to admit a precise definition, categorical and indisputable, C. Paunescu and I. Musu (1990) showed that "psychology demonstrates that the motor function is the set-up foundation for knowledge and learning, resulting influencing in a vast proportion the person's mental structure." This study is a primary consideration in organizing psychomotricity educational process-recovery for all ages.

The education of psychomotricity has an important role in occupational therapy. Rene Zazzo believes that psychomotoric education is a basic education in elementary school, because it is conditioning the whole process of school learning. The learning process can not be effective "if the child has no consciousness of his body, doesn't know his laterality, cannot situate himself in space, doesn't have the control of time and doesn't have enough coordination and stability of his gestures and movements" ( Zazzo, 1973).

Psychomotricity appears both as a skill, as well as a complex function that readjusts individual behavior. This includes participation in various physical processes and functions that provide both receiving information and proper execution of the response act.

Psychomotoric skills are special skills that made a subject for many famous scientists: Oseretsky Vernon, Seashore, Guilford, Fleishman, etc.

Although in the scientific literature exists the theory that the motoric skill is, in fact, a psychomotoric skill, R. Singer (quoted by V. Horghidan, 1980) considered that psychomotor skills are different from motoric skills because they have more quality and includes a higher degree of manifestation of perceptive and intellectual function. "

The structure of psychomotoric skills cointegrate both elements related to higher psychological adjustment and executory instrumental side. Horghidan V. (1980) considered that "the singularity of psychomotoric skills results from their practice, involving motoric executive components.

Psychomotor skills are grouped by Epuran M. (1969) in:

- Special Abilities: kinesthesion sensitivity, balance, coordination, etc..

- General Abilities: the capacity of training skills (manifested by the simple understanding and mastering the motric task proposed, a high level of progress in changing the working conditions), the ability to mobilize the energy resources (regeneration of psychoenergy after failure or accident, and to recover physiological after an intense effort).

In assessing a person's psychomotor ability, intelligence has a special significance motors.

Neveanu P. (1978) considered that "the motric intelligence is a special skill that includes cognitive elements in its structure (sensory and logical), along with memory and motric skills." This is manifested in creative activities that involve solving situations and the development of motric movements or unusual movements adapted automatic to the conditions to solve.

Psychomotoric assessment is a very complex problem because there is a wide variety of skills. The evaluation aims to measure and assess the development of skills at a time (V. Tudor, 2005).

Diagnosis of psychomotoric skills is done in most cases, together with the driving skills, the majority of the authors are not operating with differences between the two types of skills.

Tests used to assess psychomotoric skills must answer some requirements regarding:

- Characteristics of test (validity, precision, sensitivity);
- Conditions of application and interpreting the results (through quotas, profile);
- Specialization and competence of the examiner

Knowing these aspects it can be observed the prognosis significance of the tests used in assessment of psychomotoric skills. It is very important that testing should be done after the first primary selection, after which the orientation and sports training.

Regarding the prognosis, testing results are taken into account by the following rule: the more distant in time are the tests, the lower is the performance correlation (V. Tudor, 2005). This shows very clearly the need for phasing selection in sports.

Psychomotor tests cited by V. Tudor (2005):

- Meredith's physical growth picture
- Wetzel's grid
- Iowa Test position
- New York position test
- Sensory-motor awareness file

We emphasize their importance in guiding the activities important in driving activities like selection, orientation and training.

### ***Organization of education in psychomotricity***

Educational activity must be based on a work plan which will include the main components through the medium of working to achieve the proposed objectives.

On the case of educational activities the purpose is to see if the subject is drawn towards learning and acquiring knowledge of the elements of the motric capabilities, through which they can connect with the environment and other partners.

The business plan is drafted by the teacher who, through practical experience, has legitimacy to shape the group he leads. Being guided by the programme, he is obligated to make its shares worth, in favor of the ones formed to be capable of superior results.

The current curriculum is structured on areas of development, the purpose of education nowadays is to make a global developed child and to assure a good start in life.

In view of the authors (SC Albu 2006), preschool, called golden age of childhood is the period of basic psycho-behavioral acquisition that will influence child's adaptation and integration in social life.

Among the many things that Romania has to solve, it should be included primary, the issue of psychomotoric development activities both in kindergartens and primary and secondary classes. Nowadays, it is discussed the problem on an early education and using in an effective way the teaching strategies and the specific means.

European Community considers that Romania must take active steps to reverse the decline of physical exercise practice, so obvious in the last decade. Programs have introduced a new concept launched at the lifelong learning (lifelong education) general objectives can be summarized like this: free and harmonious development of personality, depending on the need and their own pace and his own identity and discovery and development of an image positive self; regarding to psychological development, the movement made in the form of physical exercise /sports lead to a physic balance, self-control, self-assessment growth, acquisitions, esteem and confidence.

The research made approaches improving the motion behavior: general coordination and static balance through means of aerobic gymnastics.

### ***Tasks***

This research aims, having as basis initial and final tests, to determine the psychomotricity development level for the Bucharest University students, who practice aerobics in physical education course.

Based on these tests, this research aims the evolution of the psychomotricity indices of these students.

### ***Research purposes***

- Investigation and analysis of coordination and balance development level of first year female students of the University of Bucharest, practicing aerobics in the academic year 2012-2013.
- Highlighting the efficiency of aerobic gymnastics in comparison with the evolution of parameters investigated.

### ***Research hypotheses***

In conducting the research we have established the following assumptions:

- The coordination and the balance can be positively influenced using the specific means of aerobics.

- Optimization of psychomotricity in aerobics lesson in higher education is determined by the use of modern methods of training opportunities (in our research using individualized training).

### ***Research methods***

- Bibliographical study;
- Ameliorative type experiment;
- Measuring and testing method;
- Mathematical statistical method;
- Graphical representation method;

### ***Development of the research***

The experimental activity was conducted in the gym of the University of Bucharest, where the students were tested at the following:

1. Testing the balance through: Flamingo test
2. Testing the coordination through: Matorin test

*Statistical indicators used:* arithmetic mean, median, mode, standard deviation, variance, range, coefficient of variation, the test student "t" dependent.

*Subjects:* subjects of our study, in number of 60 are freshman of the University of Bucharest aged 19-20 years who participated in aerobics class 2 hours per week.

The composition of the groups was done by voluntary adhesion; female students were presented the idea of differentiated activity.

To determine the effectiveness of the work carried differentiated with the experimental group we used a control group who preferred frontal activity in the basic course.

What differentiated the 2 groups was the system of organization of lessons: frontal activity in the control group and individualized in the experimental group. Differentiated instruction, involved taking into account several variables:

- Micro homogeneous groups composed on the basis of physical training (good, average and poor);
- Overweight micro groups;
- Micro groups with light vicious attitude;
- Micro groups made according to affinities (interest for certain types of lesson);

**The balance**

Group	$\bar{X}_1$	$\bar{X}_2$	S <sub>1</sub>	S <sub>2</sub>	P	MC%
A	2,7	0,9	1,66	0,98	-8,31	-66,67
B	2,86	1,8	1,71	1,33	-4,75	37,06

(table 1)

- Initial averages relatively equal
- Great uniformity value in both groups
- The high growth rate in group A (66,67 %) and higher in group B ( 37,06% )
- For group A t=8,31 is greater than the value entered in the column p=1% (0,01);the null hypothesis is rejected.
- For group B t=4,75 % idem,but with a small difference between mediums.

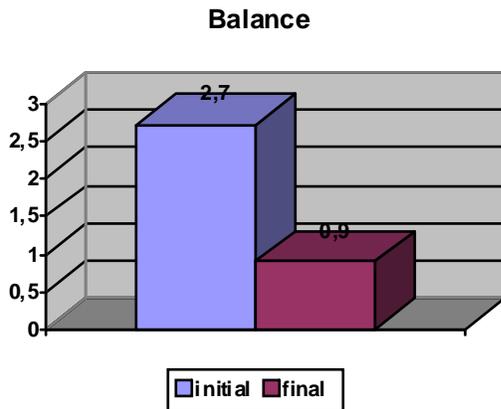
**The coordination**

Group	$\bar{X}_1$	$\bar{X}_2$	S <sub>1</sub>	S <sub>2</sub>	P	MC%
A	247,33	329,83	46,26	54,66	9,26	+33,36
B	274,5	296,5	49,77	44,52	4,08	+8,01

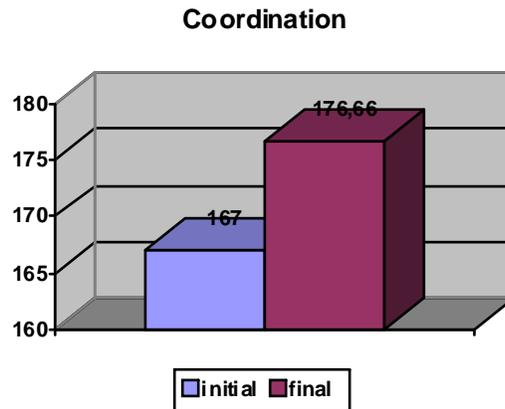
(table 2)

- Lower average value for the experimental group, which still achieves higher indicators in the course of the preparation (A = 329, 83, B = 296.5);
- Poor homogeneous group in terms of coordination;
- Large size of the increase in group A (33.36%) compared to B (8.01%);
- For Group A: t = 9.26, p> 0.01, mean difference is significant, the null hypothesis is rejected;
- For Group B: t = 4.08, p> 0.01, idem as for group A;

THE EXPERIMENTAL GROUP

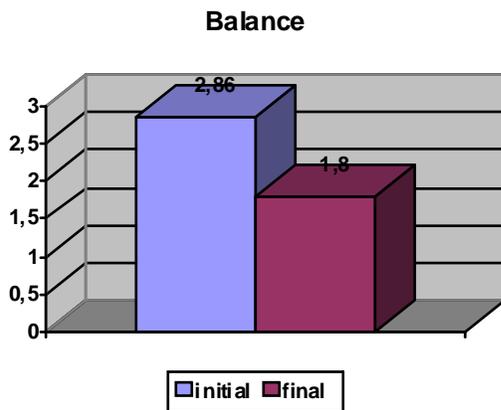


(Fig.1) improvement 66,67 %

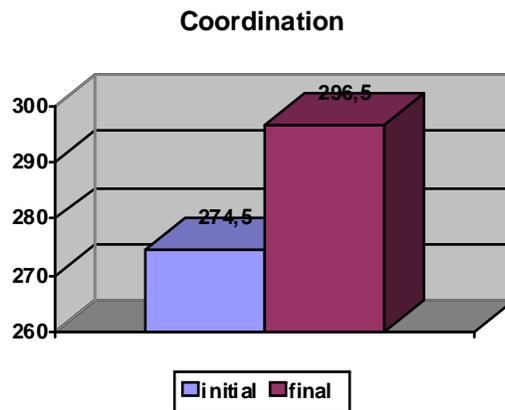


(Fig.2) improvement 33,36 %

THE CONTROL GROUP



(Fig.3) improvement 37,06 %



(Fig.4) improvement 8 %

**Conclusions of the experiment**

Psychomotricity, as part of applied psychology, approaches the study of motric function, and integrated and coordinated by mental functions. It's has been associated the idea that mastering the body is the first condition for mastering of the behavior.

Psychomotoric actions in education are primary directed to accumulate some behaviors, which gradually build in basic components that will contribute to a more accurate representations about the movements of the body and its segments.

The superiority of the experimental group results is explained by methodological maintain measures that have been taken or have been implemented training strategies:

- applying the principles of differentiation and awareness activity, each subject was treated differently and was aware of the shortcomings and individual tasks that it came back. In each of these situations were established operational structures that were practiced systematically and leisure;
- application mainly formative of the participatory methods such as: the training of individual projects, "learning - making" role play, emulation, etc. These methods have side effects such as: increasing interest in understanding phenomena, acquisition of methodological nature skills, individual and group creativity.

Through these methodological steps we can say that they have used or have grown most pedagogical valences and psychological subjects of our research purposes

Work in small groups (2-6 students Minigroups) made by thematic criteria, values, affective relations, have facilitated the improve of social relations of the group with increasing indices of motion. We could conclude that the social meanings and methodology arose in the training process itself but at the same time acted as beneficial for improving physical factors.

Null hypothesis is canceled for both groups. The difference between the means is significant. However, differences between the experimental group mean values are higher than in the control group, thus rejecting the null hypothesis and accept the experimental hypothesis.

### ***Finals Conclusions***

Psychomotricity, as part of applied psychology, approaches the study of motric function, and integrated and coordinated by mental functions. It's has been associated the idea that mastering the body is the first condition for mastering of the behavior.

Psychomotric actions in education are primary directed to accumulate some behaviors, which gradually build in basic components that will contribute to a more accurate representations about the movements of the body and its segments.

### ***Resolution***

-Implementating in the curses of physical trainnig some psihomotric tehniques for improvement of physical and psychological sphere

-Using some complex methods to counterbalance the intellectual solicitations and contributing to a pozitive transfer to professional sphere

-Practising some programmes of body awareness that cause improvement at the level of cognitive capacity.

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