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Original Article

Study on ambilaterality in the preparatory class

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Abstract:
The paper is a study aimed to identify the upper and lower dexterous limbs at the pupils in the preparatory class and also at the members of their family (mother, father, sister, brother) in order to further develop some means for developing ambilaterality in the preparatory class in the framework of the optional "Play and Movement" discipline. In order to accomplish the purpose of the paper we developed a questionnaire that was distributed in two schools from different localities - Bucharest and Pitesti - to 45 parents of the students in the preparatory class. Out of a total of 45 students in the preparatory class, 13 subjects have the most dexterous hand the left hand and 6 of them have the most dexterous leg the left one. Left-handed pupils are less involved in sports activities than pupils who are right-handed.
Key words: ambilaterality, sports activities, preparatory class, pupils, dexterity.

Introduction

Dexterity is a basic, motor quality, largely genetically determined, an attribute of the human organism that can be developed, educated, improved through a special training process.

Dexterity develops in small ages, the optimum period being between 6 and 10-11 years.

„In the literature, the meaning of the term coordination is synonymous with skill, precision, accuracy, finesse, grace, balance, stability, mastery, all of these reflect the ability of an individual to learn and quickly combine new movements, to carry out harmonious and efficient movements in a given time with low energy consumption. Its definition and treatment in multiple ways has been determined by its importance in the execution of acts and actions, starting with the most simple and ending with the most complex, but also by the fact that those dealing with these issues belong to different fields of activity : physical education and sports, pedagogy, psychology, physiology, medicine, biochemistry, biomechanics etc." (Rață G., Rață B.C., 2006).

In the opinion of the authors Scarlat E., Scarlat M.B., (2011), „the increase of the dexterity quality depends on the concerns of each teacher to increase students' motor luggage, the transmission of appropriate knowledge and the current use of complex competitive means such as: stacks, dynamic games in conditions of adversity, application utility routes containing optional variants regarding the realization of motor acts, gradually applying the principle from complex to the complex, from known to unknown.

Means designed by the teacher must constantly include:

- the demand for visual and kinesthetic analyzers;
- the demand for cognitive processes achieved through the expression of rapid thinking;
- the construction of motor acts in speed-coordination conditions;
- stimulating the speed of transition from the state of excitation to that of inhibition and vice versa;
- increase / solicitation of increased number of dynamic stereotypes and ambidextrias;
- changing the frequency and pace of movements;
- the formation of motric structures under constantly changing conditions".

Fetz F., quoted by Sabău I., Sabău E., Pehoiu C., (2001), considers that „from the field of psychomotor qualities, this quality was and is the most discussed theme. Dexterity, which in the literature is also known as coordinating qualities, is determined by the guiding and regulating processes of the motric gestures".

Dexterity „is appreciated by most specialists as a particularly complex motor quality. It involves: the ability to coordinate body segments or all the body to carry out some acts or actions; balance; precision; spatial-temporal orientation (including rhythm), amplitude (based on articular mobility, muscular suppleness and elasticity), ambidextrous, etc. All these must be subordinated in order to obtain maximum efficiency, especially under „unusual" conditions, with minimal energy consumption"(Cârstea Gh, 1993).

Bîcă M.D. (2009), presents the forms of manifestation of dexterity:

- „general dexterity - necessary for all acts and actions by all people;
- specific dexterity - characteristic of people practicing different sporting disciplines and branches;

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- dexterity in other types of motor qualities - speed dexterity, resilience dexterity, power dexterity.

These forms of manifestation of dexterity must be reported to other elements, which are also the indices of motor quality, namely:

• degree of difficulty;
• precision index (positions, directions, amplitudes);
• the strength index results from reporting the precision index to the degree of muscle strain;
• sync index. "

The conditioning factors of dexterity, after Cârstea Gh. (2000), are the following:

- "quality of the central nervous system and - especially - the coordination capacity of centers in this system;
- plasticity of the brain bark, meaning its property to combine several elementary stereotypes to elaborate a complex response, according to the new situations;
- the ability of analysts to selectively capture information and perform the relevant synthesis for the analysis of the situation;
- the quality of transmission of nerve impulses on the afferent and related pathways;
- the quality of muscle intervention, which causes contraction and relaxation;
- ability to anticipate, both in terms of technical development and other conditions (reaction of opponents or partners, climatic factors etc);
- short and long-term memory;
- creative thinking;
- the volume and complexity of propellent skills and abilities assumed by the subject;
- the level of manifestation of the other qualities".

In the opinion of author Cârstea Gh. (2000), the methodical methods of dexterity development / education are the following:

- "performing acts and actions in constant conditions, obviously in a large number of repetitions and in a long time;
- carrying out actions and actions in complex conditions, in the sense of increasing the execution difficulties compared to the normal conditions;
- performing acts and actions in variable conditions to prevent any future possible situation".

Issue approached

In the vast majority of works in the literature of speciality, it is mentioned that ambilaterality is a part of dexterity. Given that this is very important for everyday life, we aim to identify the left-handed and right- handed children of the preparatory class and then to develop some means to apply them in the lessons of the optional "Game and Movement" discipline to develop ambilaterality. We have chosen the preparatory class because it is known that dexterity in general and ambidextrous development in particular develops best at younger ages, with the optimum period being between 6 and 10 years.

One of the reasons for choosing students in the preparatory class to develop ambilaterality was that it is the most appropriate age for this. Chevalier N., 2006, quoted by Neagu N., 2012, states that at the age of 6-7 years the ,,transition from the body symmetry to the identification of the left-right structured body itself is achieved".

Beginning with the 2015-2016 school year, the optional discipline "Play and Movement" was introduced into the preparatory class. In the future, we have proposed to apply the means elaborated for the development of ambilaterality in the preparatory class, in the lessons of the optional "Game and Movement" discipline, given the efficiency of using dynamic games at the age of six.

,,Introduction of Game and Motion in the core offer of optional subjects that can be included in the school curriculum for the preparatory class, class I and II emphasizes the role that playful activities with a dynamic character must have in the process of growth and development of children aged 6-8 years. Game and Movement emphasizes the educational and instructive potential of games as a teaching tool specific to the period of small schooling, due to the fact that it explores the natural tendency of children to move. Through movement, the child explores, interacts with his own body and with the environment. Knowing the possibilities of action on the environment, the child becomes confident in his own forces and he is excited to discover the world.

Integrated within the Physical Education, Sport and Health curriculum, this optional discipline has the task of completing the influences that Physical Education exerts on the personality of the child, making a considerable contribution to its cognitive and socio-emotional development by capitalizing the valences motion games. The instructive-educational potential of dynamic games can support the development of children's emotional intelligence and, by doing so, a good adaptation to the demands of the school and social environment. The many types of motion games - with and without objects, competition and co-operation, roles, etc., can be the basis for designing training situations with rich beneficial influences on the personality of the child, which gives him the possibility to continuously define his / her cognitive traits, affective, moral - volitional.

In carrying out the didactic approach, the following aspects will be considered:

- evolving all pupils in play and movement activities, adapting the motor actions to the physical and motor particularities of some students; no games involving the elimination of pupils will be used; by rotation, the leadership / teaming roles will be given to all pupils;

- value - balanced groups / teams will be created, thus avoiding the disadvantage of pupils with lower motor capacity;

- in order to offer the chance to rematch to the defeated group / team, any contest must be repeated at least 3 times;

- a newly taught game will resume in the following 3-4 lessons in order to be appropriated by the pupils;

- motion games can be resumed from one class to another, in new organizational contexts, respecting the peculiarities of the students;

- in a lesson one can design: a new game and one previously mastered; a new game and one-two relay races; two previously acquired games; 2 to 3 relay races;

- the games and scores in a lesson will balance the driving qualities and types of effort;

- to allow a higher number of executions, groups or teams with a maximum of 6-8 pupils will be formed;

- it is recommended that there should be at least one form of competition every hour (individually, in pairs, between groups, between teams);

- in preparatory class, classes I and II, it is recommended to use games that encourage self-knowledge of propellent skills, self-sufficiency, cooperation and collaboration;

- each lesson will begin, mandatory, with the preparation of the body for effort (warming);

- after each game or relay will be given breaks after the effort;

- some of the recreation time can also be used to practice the games learned in the lesson;

- extracurricular activities will integrate movement games that students have taught throughout the lessons" (http://www.isjbrasov.ro/index.php/departamente/inspectori/invatamant-primar/2410-programa-scolara-pentru-disciplina-joc-si-miscare).

Epuran M., (2013), believes that ,,the young pupil shares his time between teaching and playing, according to school timetable and lesson preparation. Mental development, now influenced by the content of learning, will cause some changes in attitudes towards games and toys. Developed from the point of view of sociability, the pupil participates in group games, he is noisy, keeps the rules of the race for which he talks much and fights ... Small schoolchildren know how to subordinate their individual actions to the proposed goal, they know themselves quite well to choose their leader or "commander," have a developed sense of group honor".

Laterality is the natural inclination of a person to use a particular part of the body in solving various actions.

Păunescu C. (1990), quoted by Neagu N., (2012), in the book ,,Human Motricity Psycho-pedagogical Foundations" presents the types of laterality (Table 1).

Table 1. Types of laterality

Criteria	Types	Characteristics- Examples
Nature of laterality	- normal laterality	• normal left-handed, in cases where the subject is left-handed due to the fact that the main brain commands are right-handed (the same explanation for the right-handed).
	- pathological laterality	• in cases where the left-handed subject is injured in the left hemisphere, and the right hemisphere takes the lead (the same explanation for the right-handed).
Intensity	- strong laterlity	• when the intensity of functional asymmetry of one of the homologous organs is manifested
	- poorly contoured laterality	• which is identified with being ambidextrous
Homogeneity	- homogeneous laterality	• on the same side of the body: the subject is right-handed or left-handed by hand, eye, foot
	- non-homogeneous or crossed laterality	• opposed to homogeneous laterality, when on the same subject, the predominance is different for the various limbs, for example, right-handed by hand and eye and left-handed by leg
The manner of participation of upper and lower limbs	- vexed laterality	• when laterality changes through education
	- bilateral laterality	• when the legs and hands move simultaneously and there is coordination
	- hololating laterality	• when the leg and hand on the same side of the body move simultaneously
	- crossed laterality	• when the hand and leg of the opposite side move simultaneously
	- multilateral laterality	• when the hands and legs move simultaneously

The purpose of the paper was to identify the upper and lower dexterous limbs at the pupils in the preparatory class and also at the members of their family (mother, father, sister, brother) for further elaboration of some means for developing ambilaterality in the preparatory class in the framework of the optional "Play and Movement" discipline.

Research methods: literature analysis, questionnaire survey, statistical-mathematical method and graphic method.

Results

In order to accomplish the purpose of the paper, a questionnaire was made and distributed to a number of 21 parents of the pupils from the preparatory class from the Gymnasium School no. 54, Sector 3, Bucharest and a number of 24 parents of the pupils in the preparatory class at School No. 13 "Mircea ce Bătrân" from Piteşti.

Table 2. Centralization of the results of the questionnaires distributed to the parents of the pupils in the preparatory class at Gimnazial School no. 54, Sector 3, Bucharest

	ELEV		M I		P I		F/S		M I		P I		T	M I		PI		M	MI		PI		PS	
Nr. crt	M	F	S	D	S	D	F	S	S	D	S	D	T	S	D	S	D	M	S	D	S	D	da	nu
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	9	12	6	15	5	16	7	7	4	12	1	13	21	6	15	1	20	21	2	19	2	20	10	11

Legend table 2: M = male; F = female; MI = dexterous hand; PI = dexterous leg; F/S = brother/sister; T = father; M = mother; S = left; D = right; PS = practice sports.

As can be seen from Table 2, out of the 21 pupils in the preparatory class from the Gimnazial School no. 54, Sector 3, Bucharest, 4 girls and 2 boys have dexterity in the left hand, and 2 girls and 3 boys have dexterity in the left leg. Subjects no. 7 and 20 from the table are two girls that have a dexterous left hand, but a dexterous right leg. right. Subject no. 3 is a boy who has a dexterous right hand and a dexterous left leg.

From the centralization of the results of the questionnaires distributed to the parents, 8 parents have more dexterity in the left hand (one man and 2 women). Regarding the more dexterous leg, 3 parents have more dexterity in the left leg (one man and 2 women).

Of a total of 14 brothers and sisters, 4 of them (3 boys and one girl) have the more dexterous hand the left hand and the rest of them, the right hand. Regarding the more dexterous leg it can be noticed that the brother

of a single subject has dexterity in the left leg.

None of the six left-handed students practice sports. Out of pupils with more dexterity in theit left leg, only one practices sports, which means 20%. Out of 15 subjects right-handed, 10 of them practice sports activities, which means 66.66%. Regarding the dexterous right leg, out of 16 students, 9 of them practice sporting activities (56.25%).

Table 3. Centralization of the results of the questionnaires distributed to the parents of the pupils in the preparatory class at "Mircea Cel Bătrân" Gimnazial School Pitești

	ELEV		M I		P I		F/S		M I		P I		T	M I		PI		M	MI		PI		PS	
Nr. crt	M	F	S	D	S	D	F	S	S	D	S	D	T	S	D	S	D	M	S	D	S	D	da	nu
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	9	15	7	18	1	23	8	3	0	11	0	11	24	2	22	3	21	24	1	24	1	24	14	10

Legend table 3: M = male; F = female; MI = dexterous hand; PI = dexterous leg; F/S = brother/sister; T = father; M = mother; S = left; D = right; PS = practice sports.

As can be seen from Table 3, out of the 24 students in the preparatory class at the Gymnasium School, Mircea Cel Bătrân "Pitești, 4 girls and 3 boys have a dexterous left hand and one boy has a dexterous left leg. Subject no. 13 of the table has a dexterous left hand and a dexterous left leg.

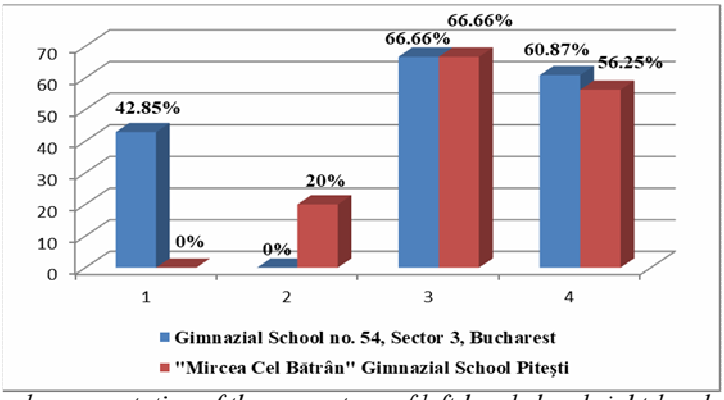
From the centralization of the results of the questionnaires distributed to the parents, 3 parents have a dexterous left hand (2 men and one woman). As far as the leg is concerned, 4 parents have dexterous left legs (3 men and one woman). It is noteworthy the mother of the subject number 7 (who has dexterity in his right hand and right leg), who is ambidextrous at both the upper and lower limbs.

Out of a total of 11 brothers and sisters (8 boys and 3 girls) no left-handed person was identified.

Out of the 7 left-handed students, 3 of them practice sports activities, which means 42.85%. The only subject who have a dexterous left leg, does not practice any sport. Out of 18 right-handed subjects, 12 of them practice sports activities, which means 66.66%. As far as the dexterous leg is concerned, which is the right one,

out of 23 pupils, 4 practice sporting activities (60.87%).

In graph. no. 1 is the graphical representation of the percentage of left-handed and right-handed pupils practicing sports activities.



Graph 1. The graphical representation of the percentage of left-handed and right-handed pupils practicing sports activities

Conclusions

- The optimal age of development of dexterity in general and ambilaterality in particular is between 6 and 10 years.
- Out of a total of 45 students in the preparatory class, 13 subjects have a dexterous left hand and 6 of them have a dexterous left leg.
- As a result of the study, we found out that out of the 5 pupils who have dexterity in their left leg (from the preparatory class in Bucharest), one of them practice sports activities, which means 20%, and out of the 6 left-handed pupils, neither one does practice sports.
- We also found out that out of 7 pupils left-handed (from the preparatory class in Pitesti), 3 practiced sports activities, which means 42.85%, and the only pupil who has a dexterous left leg, does not practice any sport.
- After the statistical interpretation of the results, I came to the conclusion that the left-handed students are less involved in sports activities than the right-handed ones.
- A 66.66% of the students in preparatory class from Bucharest, who are right handed, practice sporting activities. As far as the dexterous leg is concerned, which is right, 56.25% of the students practice sports.
- The same percentage, of 66.66%, of the subjects from Pitesti, who are right handed, practice sports activities. Regarding the dexterous leg, which is right, 60.87% of the pupils of the preparatory class practice sports.

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