"Babeş – Bolyai" University Cluj-Napoca
Faculty of Psychology and Educational Sciences

PAŞCAN ADRIAN

FORMATION AND DEVELOPMENT OF PSYCHOMOTOR SKILLS IN MIDDLE SCHOOL PUPILS THROUGH CREATIVE EXERCISES SPECIFIC FOR SCHOOL BASCHETBALL

Summary of the PhD Thesis

Scientific coordinator
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SUMMARY

FORMATIVE EXPERIMENT

Keywords: creativity, psychomotor skills, creative exercises, technical-tactical procedure, tactical action, motion games, technical execution.

Note:

The abstract makes reference to the most significant aspects revealed in the content of the doctorate thesis.

With the aim of presenting the most relevant aspects, 16 Figures and 5 Tables have been selected from the total number of 42 Tables and 100 Figure and Graphs.

The same selection has been operated within the appendices content.

INTRODUTION

This research project arose from a practical need for finding some answers regarding the causes of why some pupils are ill-prepared and why their interest for basketball weakens in middle school alongside with specific means of overcoming these aspects.

Exploiting motor knowledge, competences and skills does not mean using them spontanously and mechanically, but their creative application with the aim of adapting and readapting within the educational process, and beyond it, after finishing school.

As basketball is a cumpolsory sports discipline it has a heavy weight within curriculas of school physical education at all levels.

Basketball comprises of a great number of technical elements and practices, from the easiest to the more complex ones and the ones of great difficulty. Comanding these elements and practices needs but also develops a great range of motor skills also needed in everyday life. Each technical element has precise spatial and temporal parameters and parameters of physical effort as well, thus preparation needs to be done so as „performers gradually reach very acute spatio-temporal differentiations and differentiations of physical effort" (Dungaciu ,P.,1982, p.61).

Due to their formative efficiency, accessability and spectacular nature, we think they should be met with great interest by middle school pupils, and that these exercises should be widely used in schools in our country, even in those with modest infrastructure.

There is a wide range of specialized literature, autochtonous, but also foreign dealing with the methods of aquiring technical and strategic actions in basketball. After studying this literature one comes to the conclusion that not enough attention is paid to aquiring and developing the necessary psycho-motor skills.

The present paper reviews a large number of theoretical and methodological information, reorganizes the old empiric concepts and suggest the implementation of new rational undertakings in organizing, conducting and developing the instructive and educational process.

Supporter of a formative-participative didactic process, we think that promoting the didactic relationships of collaboration, stimulating the effort of pupils, their wish to take part in introducing and studying new aspects, of being original, inventive and creative is necessary.

The strategy we are suggesting emphasizes the development of psycho-motor skills through manifold exercises with a creative priority during a first phase, and during a second phase the actual aquiring of technical and strategic actions according to the methodology set forth by the spcialized literature and adjusted to the level of the puplis and the existing infrastructure.

The aim of the paper is to improve the instructional and educational process within the discipline of basketball in middle school, by creating and creatively applying some specific exercises for the formation and development of psycho-motor skills according to the particularities regarding the age of the pupils and the existing infrastructure.

* * *

THEORETIC FOUNDATION

This paper comprises of four chapters.

The first chapter reviews certain basic aspects of the evolution in the field of basketball. Here we synchronically tackled the main events in basketball history, and then we referred to the main evolution steps of the basketball game: the strategy and the game technique.

The second chapter comprises of 6 subchapters which present the charasteristics of the basketball game, its goals, its influences on the human body, as well as the importance of movement games and preliminary games for exercising the technical and strategic actions.

This part of the thesis continues with concept disambiguation regarding *skills* and *creativity,* ending with means of simulation and exploitation of the creative potential within the basketball game.

The requirements of modern everyday life and the urgent need to solve complex problems within all areas of life have turned the training of creativity into a priority, i.e. into a stringent need for society, within all fields of action.

As Prof.univ.dr. Ionescu,M., shows ,,*At the moment a priority for educational sciencies is the exploitation of potential creativity nuclea and training creativity in children of all ages, a priority which aims at reaching the following general goals"* (2000,p.129):

- Forming of a positive/adequate attitude towards progress, towards new elements and towards their introduction in ones actions;
- Their preparation to accept novelty as an indication of progress, of innovation and human creativity;
- Encouraging pupils manifestations characterized by original condition and results;
- Forming and developing the skills and abilities to create, to rethink work strategies and to integrate them in dynamic, flexible and efficient systems;
- Forming and developing abilities to create, to make something new: connections, ideas, theories, ideal or material models, material products and so on.

School represents the main factor which can and must contribute decisively to exploiting the creative potentials of pupils, to stimulate their creative talents and train creativity.

Jurcău,N., shows that: ,,*school should not be limited to providing knowledge and making pupils avoid failure, but has to take up the role of helping pupils to discover their own potential.*"(2001, p.138).

Realizing this complex goal implies restructuring the educational process *towards making the components of the educational process more modern and efficient in the perspective of a creative pedagogy.*"(1972,p.130).

FORMATIVE RESEARCH

CHAPTER V DETERMINATION PHASE

During this phase we planned to conduct a determinative study regarding the methodology of basketball in middle school. As basketball is a cumpolsory sports discipline it has a heavy weight within curriculas of school physical education at all levels.

We aim at gathering significant information through the research methods used in order to compare the data in the specialized literature and the documents drawn up by the Ministry of Education and Research on the one hand and the actual reality on the field on the other hand.

We also point out that during this phase we aim at delivering pertinent remarks, finding answers to some causes why some pupils are ill-prepared, why the interest of others regarding

basketball diminishes at an early stage, as well as actual means of overcoming these problems, hoping that they will play a part in improving basketball methodology in school.

We hope that the information gathered represents the starting point for the pedagogical research project regarding the reforming of the instructive and training process of basketball in school.

V.1. Research Methods Used in the Determination Phase

V.1.1. Bibliographic Information and Documentation

V.1.2. Method of Researching Curricula Documents and Other School Documents

V.1.3. Investigative Data Regarding the School Population and Educational Units from Cluj County, Middle School Level

V.1.4. Investigations Referring to the Existing Infrastructure in the Schools of Cluj County for School Basketball, Middle School Level

V.1.5. Observational Method

During our research we used direct observation during classes of physical education in middle school under circumstances as various as possible.

The observation took place during the months April, May, June of the school year 2008-2009, in three educational units in the city of Cluj-Napoca and in one unit in the country (village school), Cluj county.

The educational units, grades and numbers of lessons where the research (observation) was conducted are presented in table no.V.1.

Table no.V.1.

Educational units and grades where the observation took place

Educational unit	**Grades and number of lessons assisted**				**Total of lessons**
	5th grade	**6th grade**	**7th grade**	**8th grade**	
„Nicolae Bălcescu" Highschool	3	3	3	3	**12**
„Avram Iancu" Highschool	4	3	2	3	**12**
School with grades I-VIII, No.5	3	3	3	2	**11**
School with grades I-VIII, Gilău	3	2	2	3	**10**
Total	**13**	**11**	**10**	**11**	**45**

Lessons took place as well inside and outside. These particular educational units have been chosen out of the following reasons:

- ❖ Infrastructure;
- ❖ Specialization of the teacher of physical education;
- ❖ Specialization of the school;
- ❖ Numbers of hours of physical education per week (schedule scheme per week)

The teaching was observed using an „observation grid" regarding the stages of the lesson. We point out that some headings referred to the teacher, while others to the pupils during various stages of the lesson. The lessons observed had basketball goals as a topic (or at least one of the

topics), with learning assignments, consolidation assignments, perfection assignments or evaluation assignments of the skills regarding this sports discipline, which is part of the school curricula.

The observation grid was drafted based on preliminary documentation – whereas a pilot observation was conducted in every educational unit, aiming at the verification (and eventually at adding and/or changing) of certain objectives which were planned to be observed at the beginning and the adjusting of the pupils with the observer in order for the natural behaviour of the subjects not to be influenced.

The direct and extended contact enabled us to gather a large number of observations under various conditions (under the condition of their natural environment), during physcial education classes, using a grading and registration system with conventional signs.

In order to attain operational working methods comparative appreciation scales were composed, where the level of the observed categories were marked.

The observation grid comprised of the following categories (followed objectives):

- Personalized means of applying the school curricula;
- Does the warming up also contain specific elements regarding the preparation of the locomotor system and the circulatory system for accomplishing the set topic under best circumstances;
- Are appropriate circumstances and means for accomplishing the topic ensured;
- Concerns for the development of psycho-motor abilities through specific exercises for the basketball game;
- Proportion of the professional interest of the teacher in the components of the preparation, as follows:
  - Harmonious physical development;
  - Development of motor skills;
  - Enlarging of the basic motor skills and motor skills specific for basketball;
  - Development of organizational skills:
- Behaviour, attitude and implication level of the pupils towards basketball;
- Accordance betweent the qualification of the pupils and the requirements of the curricula of basketball;
- Concerns regarding ensuring favourable circumstances for training the children within their searches (which is to favourize learning through problematization and discovery);
- Using methodologic procedures specific for basketball.

V.1.6. Method of Inquiry Using the Questionnaire

In order to complete the data obtained up to this point and out of the wish to encolse a sample of pupils and teachers of physical education as representative as possible within this investigation we drew up a questionnaire for middle school pupils and a questionnaire for teachers at this school level.

The questionnaires comprised of a series of questions (about opinions but also testing knowledge), in order to receive ansewers meant to help with the approach of the determination research.

We used a questionnaire with open answers, leaving total freedom to the person filling in the questionnaire (Annexes no.V.1 and no.V.2).

605 subjects were interrogates, out of which 428 pupils and 177 teachers.

The pupils interrogated come from educational units in the city of Cluj-Napoca and educational units from Cluj county. When chosing the educational units we used level sampling „which implies grouping the collectivity by one or more characteristics”(Ionescu, M., 2000, pg.270).

Every envisaged class was divided on the criterion of gender (boys and girls separately) into two subgroups. In the case of both the boys and the girls two criteria were considered: general school record and school record (evaluation) regarding physical education. We obtained this

information from the teacher of physical education. From every subgroup obtained 1 or 2 subjects were chosen (mainly in proportion to the dimension of the subgroup).

The interrogated teachers were selected from Cluj county, and came from city as well as village schools, and from neighbouring counties.

Tables no.V.2. and no V.3. present the cities where the subjects are active, the seniority in teaching and the number of teachers who filled in our questionnaire.

Table no.V.2.

Summary of the cities and number of pupils per class

Nr. crt.	City	Numer of pupils per class								Total
		5th grade		6th grade		7th grade		8th grade		
		B	G	B	G	B	G	B	G	
1	Cluj-Napoca	22	24	24	26	24	22	20	20	**182**
2	Turda	5	5	8	6	4	4	4	4	**40**
3	Dej	5	5	5	4	4	4	5	5	**37**
4	Câmpia-Turzii	4	4	3	3	3	3	2	2	**24**
5	Gherla	3	3	3	3	2	2	2	2	**30**
6	Huedin	2	3	2	3	3	2	3	2	**20**
7	Village school	12	14	13	14	14	12	12	14	**105**
8	**TOTAL**	**53**	**58**	**58**	**59**	**54**	**49**	**48**	**49**	**428**

Table no.V.3.

Summary of the teaching staff according to cities and seniority

Nr. Crt.	City	Number teaching staff/seniority					Total
		1-5 years	6-10 years	11-15 years	16-20 years	<20 years	
1	Cluj-Napoca	8	6	14	20	28	**75**
2	Dej	-	2	1	2	2	**7**
3	Turda	1	1	2	2	3	**9**
4	Câmpia-Turzii	-	-	2	2	2	**6**
5	Gherla	1	-	1	-	2	**4**
6	Huedin	1	-	1	2	1	**5**
7	Mediul rural j.Cluj	4	5	3	2	4	**18**
8	Bistriţa	2	2	3	3	4	**14**
9	Oradea	2	3	3	3	4	**15**
10	Zalău	2	2	4	3	3	**14**
11	Alba-Iulia	1	2	2	3	2	**10**
12	**Total**	**22**	**23**	**36**	**42**	**55**	**177**

V.2. CONCLUSIONS OF THE DETERMINATION PHASE

The determinative research conducted shows the positive aspects, but also a part of the negative aspects regarding the methodology of the discipline of basketball in school.

In the following, we want to point out the aspects we consider most important.

As *positive aspects*, we can mention:

- There is a manifold specialized literature, autochtonous as well as foreign regarding the methodology of basketball as a discipline;
- The school curricula is „flexible", offering the teacher the possibility to reach his instructional and teaching objectives, which are of reference for this discipline and according to the existing infrastructure;
- According to the conducted inquiries there are also schools with good and even very good infrastructure;
- Part of the teaching staff (a low percentage) are preoccupied to use active and participational teaching methods, offering lessons with attractive and diverse content;
- The observations and the answers to the questionnaire as well confirm that most pupils in 5th and 6th grade are interested in this sports discipline;
- The training level of the pupils is inconsistent, but where minimal conditions are ensures, the requirements of the curricula are respected.

From the *negative aspects* observed, some are based on objective facts, but most also reveal a subjective component

Negative aspects with *objective causes* are:

- Inappropriate infrastructure for the instructive and training process of the discipline basketball to take place under best conditions;
- Insufficient number of hours alloted for learning the elements indicated in the school curricula;
- Discontinuity due to the structure of the school year and and the requirements of the school curricula;
- Discontinuity regarding the training between school levels;
- Small work space, mixed classes, more than one class in the gym at the same time.

Regarding the negative aspects due to *subjective causes*, which depend on the teacher, we mention:

- Children are very little trained in order to develop psycho-motor skills which are necessary for elements and technical procedures for the basketball game;
- Specific methodological procedures are very seldom (sometimes never) used in basketball methodology;
- In the methodology of applying technical elements and learning strategy actions so called „problematic situations" are created very seldom, which pupils need to solve alone, either with the help of their fellow pupils or of the teacher;
- Instruction methods are not used at all: case studies, group work, problematization;
- In many situations explanations are strictly formal, the teachers do not emphasize the correct term of the technical element, and do not present the key moments of the movement;
- The importance of the basketball game in everyday life is not pointed out to the pupils, neither its contribution for the speeding up of learning certain motor skills belonging to other sport disciplines;
- During lessons a greater importance should be given to dynamic, attractive games and competitions;
- A great number of teachers do not read and study recent specialized articles on basketball.

The determinative research conducted shows aspects as they are in reality, on the field, referring to basketball as a discipline.

The information gathered through applying the research methods were of great use, as they broadened our horizon of the cognitive part, as well regarding the situation in the schools, meaning the relationship between the teacher and the pupil, and the way in which the next step of our thesis, the experimental research, is to be tackled.

CHAPTER VI EXPERIMENTAL RESEARCH

VI.1. Hypothesis of the Experimental Research

The hypothesis tested within the research conducted on the experiment group is the following: *creative exercises specific for the basketball game, conceived by the teacher togehter with the pupils, contribute to the formation and development of psycho-motor skills.*

VI.2. Place of Conduction and Material Resources

The experiment was conducted at ,,Nicolae Titulescu" School in the city of Cluj-Napoca. The material infrastructure of the school is appropriate for achieving the requirements of the school curriculum regarding basketball.

VI.3. Sample of Subjects

The subjects of the experiment were 5th-grade and 6th-grade students of the aforementioned school ("Nicolae Titulescu").

The research included 106 students, 52 girls and 54 boys, who were equally divided into experiment groups and control groups.

The number of students in each sample can be seen in table no. VI.1.

Table no.VI.1.

Number of students in each sample per grade

Grade	Boys		Girls		Total
	Experiment	Control	Experiment	Control	
5th	14	14	14	14	**56**
6th	13	13	12	12	**50**
Total	**27**	**27**	**26**	**26**	**106**

The experimental lot was made up of grades 5 A and 6 B, and the control lot was made up of grades 5 B and 6 A.

VI.4. Organization, Stages and Development of the Experiment

The experiment was conducted under natural conditions in the basketball-themed physical education classes (learning units), while observing the structure of the school year, divided into semesters and studying the proposed working hypothesis.

The research was carried out in the period October – May of the 2009-2010 school year.

The experiment included 4 stages.

Stage no. 1.- **pre-experimental** – covered the period October 10-28, 2009. The purpose of this stage was:

- to establish the sample (October 10-14);

- to carry out the initial testing (T1) (pre-test) on the development level of psycho-motor skills, using the battery of tests applied both to the experimental group and to the control group (October 15-28, 2009).

Stage no. 2 - experimental:

- covered the period November 1-15 2010, Feb. 14 – May 10 2010
- in this period, specific exercises for activity-based psycho-motor skill development and creative basketball exercises were created and applied to the experimental groups;
- during this stage of the experiment, intermediate feedback-type corrective testing was carried out to optimize and rectify the experimental factor.

Stage no. 3 – post-experimental covered the period May 10-28, 2010 and had the following objectives:

- the final testing (T2) of both the experimental groups and the control groups, using the battery of tests (the same tests as in T1), May 10-18, 2010;
- insert into tables, arrange and analyze the obtained data: May 18-20, 2010;
- statistical-mathematical recording of the obtained results and their interpretation: May 21-26, 2010;

Stage no. 4 – retesting, with the following objectives:

- retesting of both the experimental groups and the control groups, using the battery of tests (the same tests as in T1 and T2), in order to establish the long-term assimilation degree of acquisitions, October 5-16, 2010;
- insert into tables, arrange and analyze the obtained data: October 17-20, 2010;
- statistical-mathematical processing of the obtained results and their interpretation: October 21-26, 2010;
- formulation of conclusions and proposals, October 27-29, 2010.

VI.5. System of Mathematical-Statistical Methods

The statistical methods that we used are the following:

- arithmetic mean,
- standard deviation,
- coefficient of variation,
- "t" test and significance threshold between means,
- coefficient of correlation and determination between certain tests.

VI.6. Development of Psycho-motor Skills through Specially Designed Exercises

The novelty of this strategy consists in approaching first the psycho-motor skills and developing them through exercises specifically designed and applied to the experimental groups. We must specify that we focused mainly on the creative nature of exercises.

This new approach is not addressed in the specialized literature and is not present (for now) in school practice.

In order to develop the psycho-motor skills of pupils in grades 5 A and 6 B, we used in our research the following strategy (problematic situations):

- the teacher presented the psycho-motor skills necessary for the technical procedure or for the strategic action under study and devised specific exercises to develop such skills;

- the teacher presented the technical element or strategic action and the psycho-motor skills necessary to learn it and, together with the pupils, created specific exercises to develop such skills;
- the teacher presented the technical element and the psycho-motor skills necessary to execute it, and the pupils had to find the most effective exercises for the development of such skills;
- presentation of the technical element or strategic action, the teacher and the pupils determined together the most important psychomotor skills necessary to learn it, and then the pupils had to devise proper exercises to develop such skills;
- presentation of the technical element, the pupils had to "discover" on their own the necessary psycho-motor skills, and then devise specific exercises to develop them, together with the teacher;
- presentation of the technique(s), the students had to find and solve the problem on their own, namely to discover the necessary skills and devise specific exercises to develop them.

This strategy allowed us to create an optimum number of specific exercises for the development of psycho-motor skills.

The following sets of exercises were created and applied to 5^{th} and 6^{th} graders:

- exercises to stimulate to coordination ability
- exercises to develop precision and orientation of body positions and movements in space
- exercises to develop the assessment ability and the ability to orient in time
- exercises to improve the function of the vestibular system
- exercises to develop the speed of reaction - to different stimuli
- exercises to develop the sense of static and dynamic balance
- technical and strategy exercises specific to basketball

CHAPTER VII RESEARCH RESULTS

Data Analysis, Processing and Interpretation

This subchapter of the paper analyzes the results of tests carried out on the two groups. The obtained data were processed on the computer using Excel 2007.

We are going to present below the evolution of the arithmetic mean, of the standard deviation, of the coefficient of variation, of the "t" test and the significance threshold between means, as well as of the coefficient of correlation and determination between certain tests.

The battery of applied tests:

- Mobility test;
- Stable equilibrium test;
- Denisiuk's skill test
- Vestibular stability test
- "Falling stick" test
- "Square" test
- "Hexagon" test
- "Pass" test

In order to make a highly suggestive presentation, in this summary we analyze and interpret the results of four tests in the first two stages of the analysis and interpretation activities.

Stage I - analysis of the arithmetic mean, standard deviation and coefficient of variation, per grades and tests, separate for boys and girls.

Mobility Test

The boys' means evolve from T1 to T2 in each grade (Fig. VII.1). The differences are favorable to the experimental groups. On retesting, the experimental groups have a slight involution in the 5th grade and an evolution in the 6th grade. The situation is similar in the control groups.

The coefficient of variation is small, showing a small dispersion and a high homogeneity around the central value.

As you can see, the progress made after the application of the independent variable is higher in the 6th grade (boys) than in the 5th grade, of the experimental groups.

The girls have higher means than the boys (fig. no. VII.3). The progress is higher in the experimental classes, the evolution of the arithmetic mean is similar for the two classes, the 5th and the 6th. On retesting, the situation is similar to the groups of boys, the 5th grades regressed, and the 6th grades had a slight progress.

The coefficient of variation has in all grades, both in T1 and in T2, a high homogeneity around the central value.

Of the four experimental grades, the highest progress from the initial testing to the final one belongs to the 6th grade girls.

Stable Equilibrium Test

The results obtained in the static balance test are higher in T2 than in T1 for the whole research group. The means show obvious progress from T1 to T2 in the experimental groups. The control groups too registere an evolution between the two tests, but at a much smaller scale.

The coefficient of variation shows an average homogeneity in the experimental 5th and 6th grades, and a lower homogeneity in the control ones.

The groups of girls have a less obvious progress between the two tests, in both research groups, more significantly in the experimental groups.

Except for the 5th control grade, which has an average homogeneity, the other grades are characterized by a high dispersion.

On retesting, all grades regress, especially the boys in the 5th grade of the experimental group, and the 6th grade girls of the experimental group.

Of the four experimental grades, the greatest progress from initial testing to the final one belongs to the 5th grade boys.

Denisiuk's Skill Test

The results of the Denisiuk's Test in the T2 experimental groups are higher than the results of all the grades (boys) in the control groups.

The coefficient of variation indicates a high homogeneity for the whole research group.

The means of the groups of girls indicate progress from T1 to T2 both in the experimental groups, and in the control groups, being slightly higher in the first category.

On retesting, all the grades (except for the 5th grade boys, who remain at the same level) show a decrease in performance, especially the sixth grades.

The coefficient of variation indicates a high homogeneity of individual values around the central value, in all the research groups

The highest progress from T1 to T2 belongs to the 5th and 6th grade boys.

Vestibular Stability Test

In the groups of boys, there is a significant progress of the arithmetic means between the two tests, in both grades of the experimental groups.

The coefficient of variation shows a lack of homogeneity of the individual values around the central value, both in the experimental groups and in the control groups.

In the groups of girls, the value of the arithmetic mean has a much more significant progress in the experimental groups than in the controls groups.

The C.V. has a total lack of homogeneity in both tests for all the groups.

On retesting, all the grades show regression, more pronounced in the sixth grades, both girls and boys.

The highest progress from T1 to T2 is recorded in the experimental 6^{th} grades, both girls and boys.

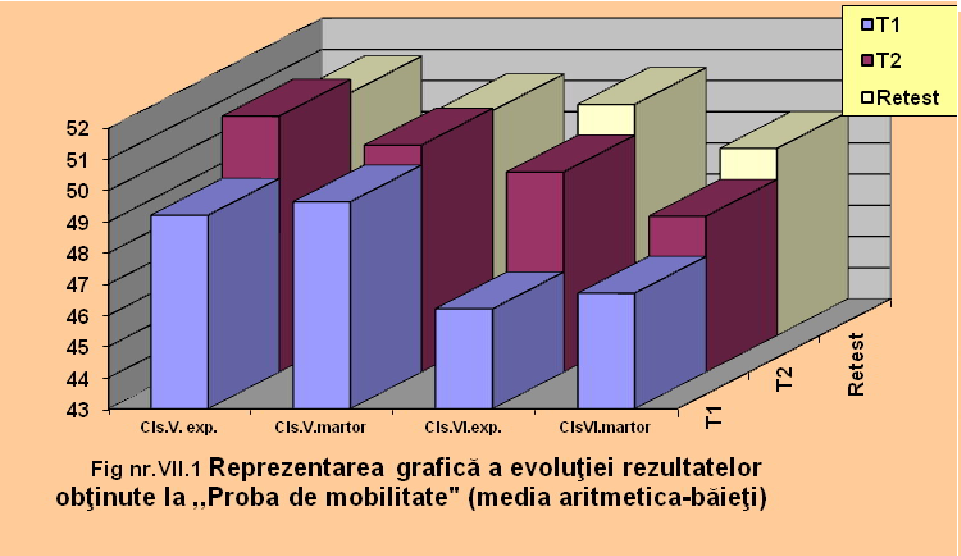

Fig nr.VII.1 Reprezentarea grafică a evoluţiei rezultatelor obţinute la ,,Proba de mobilitate" (media aritmetica-băieţi)

Fig. no. VII.1. **Graphical representation of the evolution of the results obtained in the "Mobility test" (arithmetic mean – boys)**

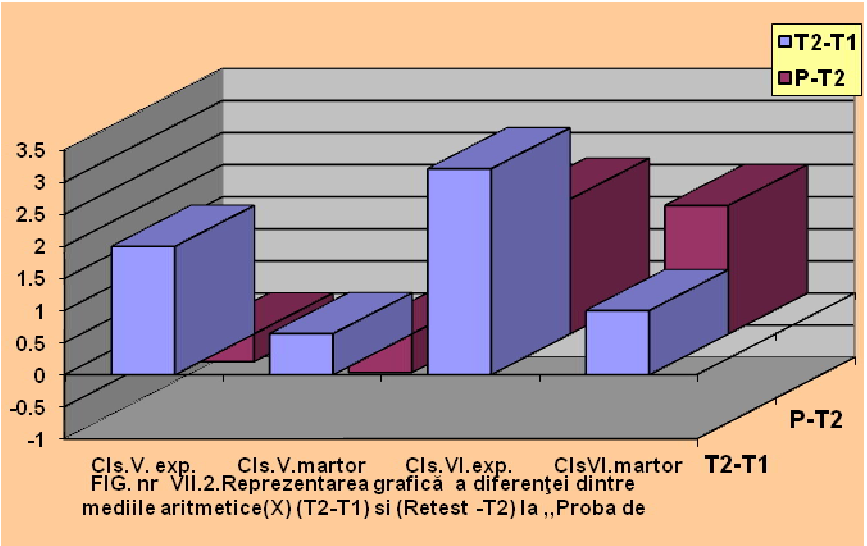

FIG. nr VII.2.Reprezentarea grafică a diferenţei dintre mediile aritmetice(X) (T2-T1) si (Retest -T2) la ,,Proba de

Fig. no. VII.2. **Graphical representation of the difference between the arithmetic means (X) (T2-T1) and (Retest-T2) in the "Mobility test" – boys (progress/regress)**

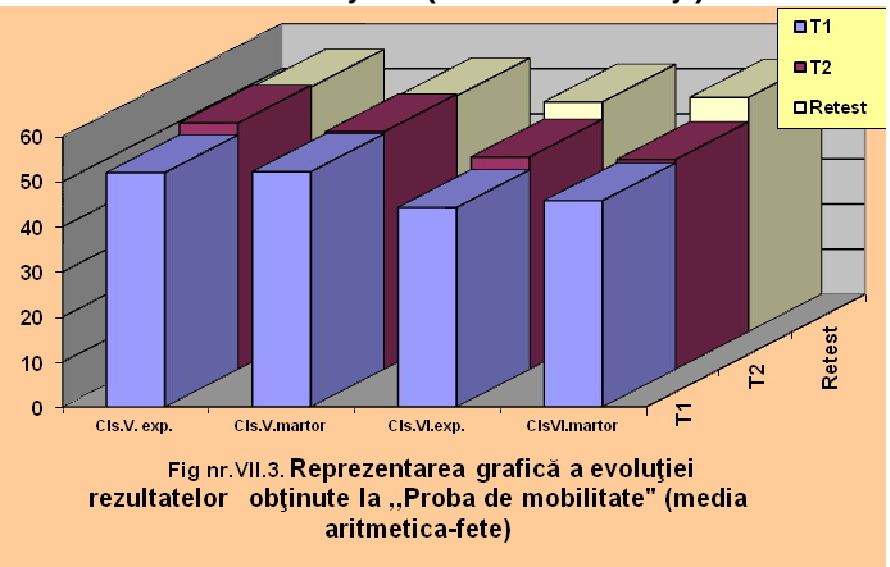

Fig nr.VII.3. Reprezentarea grafică a evoluţiei rezultatelor obţinute la ,,Proba de mobilitate" (media aritmetica-fete)

Fig. no. VII.3. **Graphical representation of the evolution of the results obtained in the "Mobility test" (arithmetic mean – girls)**

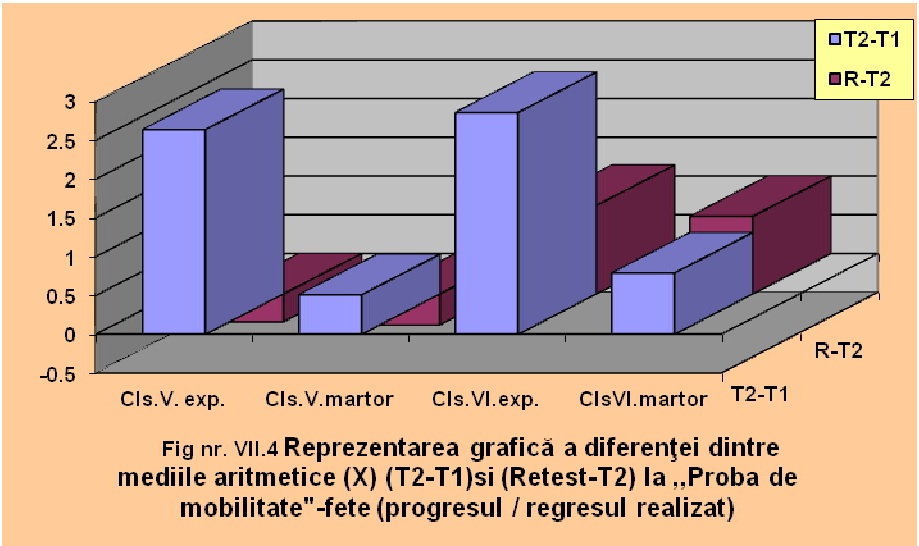

Fig nr. VII.4 Reprezentarea grafică a diferenţei dintre mediile aritmetice (X) (T2-T1)si (Retest-T2) la ,,Proba de mobilitate"-fete (progresul / regresul realizat)

Fig. no. VII.4. **Graphical representation of the difference between the arithmetic means (X) (T2-T1) and (Retest-T2) in the "Mobility test" – girls (progress/regress)**

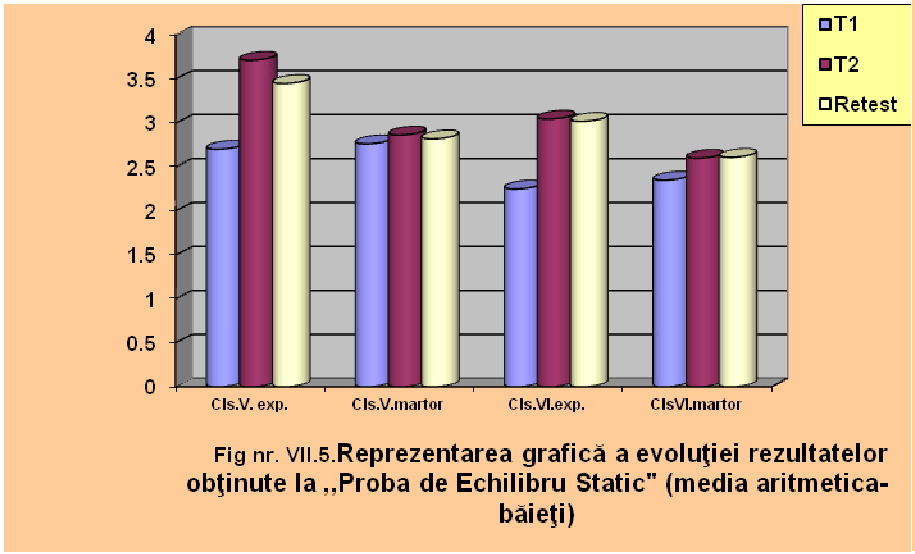

Fig nr. VII.5.**Reprezentarea grafică a evoluţiei rezultatelor obţinute la ,,Proba de Echilibru Static" (media aritmetica-băieţi)**

Fig. no. VII.5. **Graphical representation of the evolution of the results obtained in the "Static equilibrium test" (arithmetic mean – boys)**

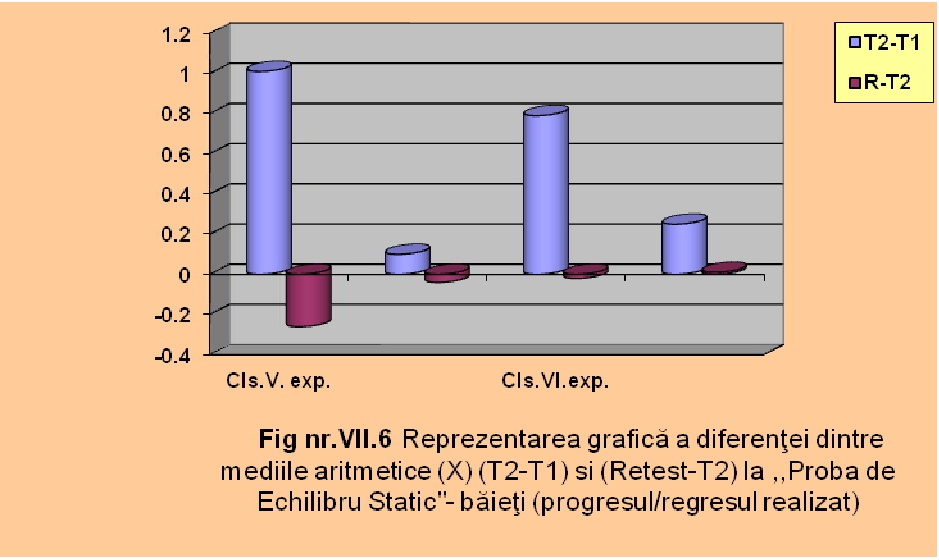

Fig nr.VII.6 Reprezentarea grafică a diferenţei dintre mediile aritmetice (X) (T2-T1) si (Retest-T2) la ,,Proba de Echilibru Static"- băieţi (progresul/regresul realizat)

Fig. no. VII.6. **Graphical representation of the difference between the arithmetic means (X) (T2-T1) and (Retest-T2) in the "Static equilibrium test" – boys (progress/regress)**

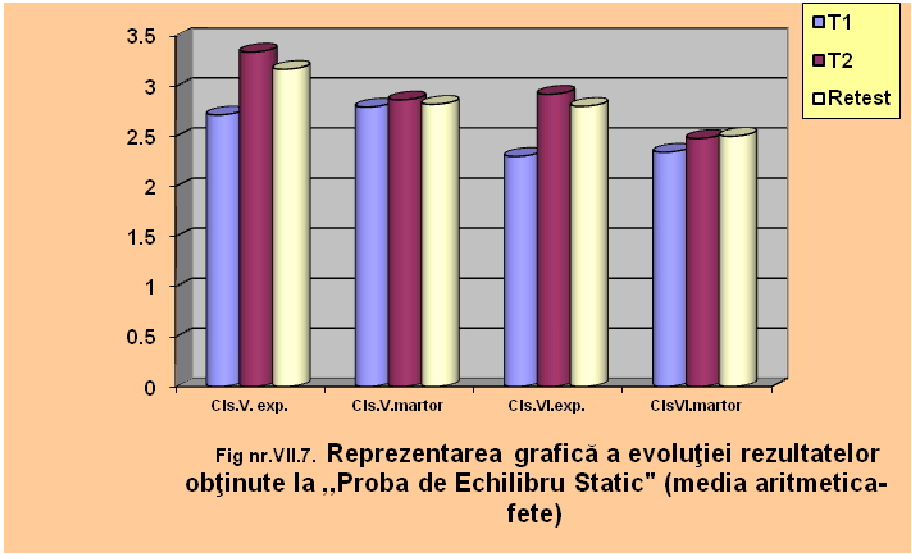

Fig nr.VII.7. **Reprezentarea grafică a evoluţiei rezultatelor obţinute la ,,Proba de Echilibru Static" (media aritmetica-fete)**

Fig. no. VII.7. **Graphical representation of the evolution of the results obtained in the "Static equilibrium test" (arithmetic mean – girls)**

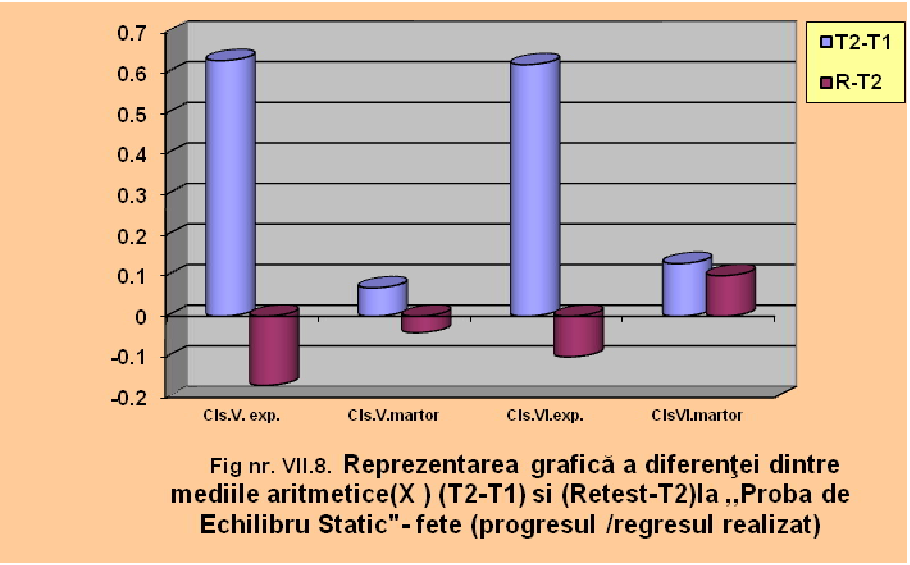

Fig nr. VII.8. **Reprezentarea grafică a diferenţei dintre mediile aritmetice(X) (T2-T1) si (Retest-T2)la ,,Proba de Echilibru Static"- fete (progresul /regresul realizat)**

Fig. no. VII.8. **Graphical representation of the difference between the arithmetic means (X) (T2-T1) and (Retest-T2) in the "Static equilibrium test" – girls (progress/regress)**

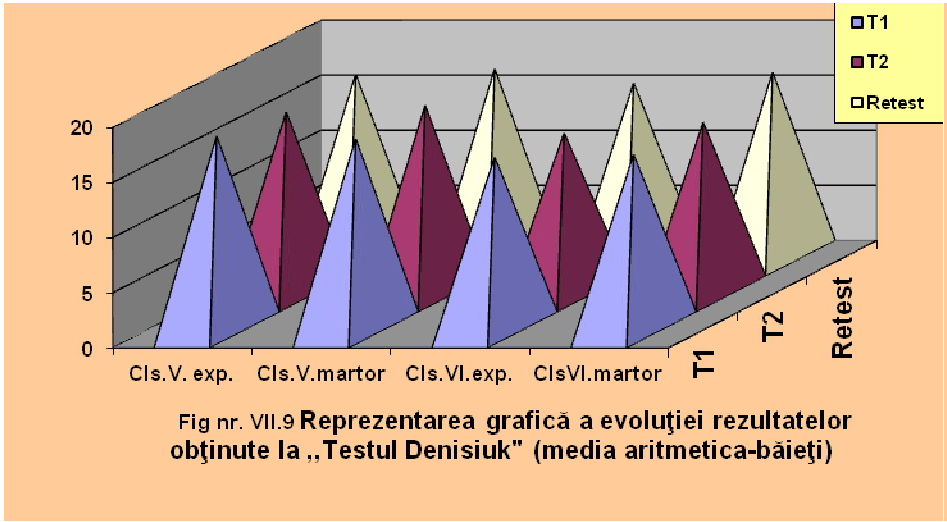

Fig nr. VII.9 Reprezentarea grafică a evoluţiei rezultatelor obţinute la ,,Testul Denisiuk" (media aritmetica-băieţi)

Fig. no. VII.9. **Graphical representation of the evolution of the results obtained in the "Denisiuk's test" (arithmetic mean – boys)**

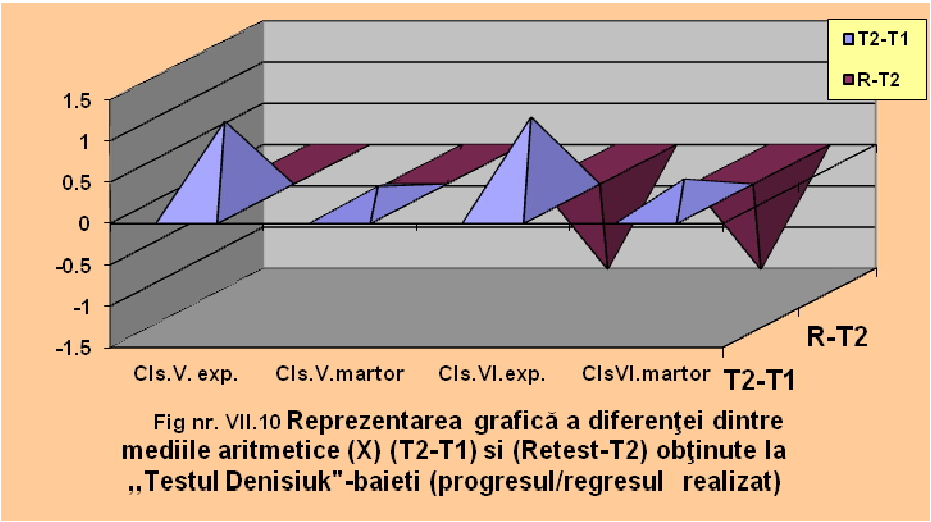

Fig nr. VII.10 Reprezentarea grafică a diferenţei dintre mediile aritmetice (X) (T2-T1) si (Retest-T2) obţinute la ,,Testul Denisiuk"-baieti (progresul/regresul realizat)

Fig. no. VII.10. **Graphical representation of the difference between the arithmetic means (X) (T2-T1) and (Retest-T2) in the "Denisiuk's test" – boys (progress/regress)**

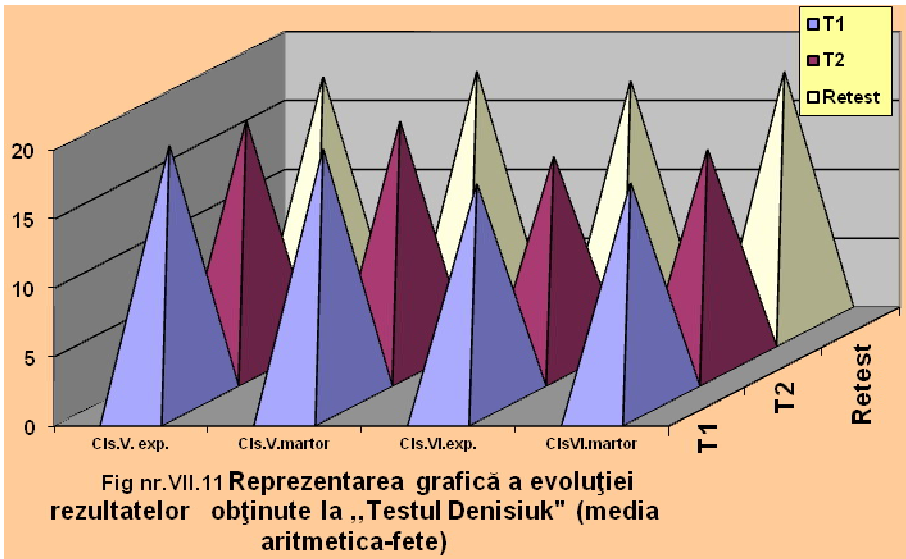

Fig nr.VII.11 Reprezentarea grafică a evoluţiei rezultatelor obţinute la ,,Testul Denisiuk" (media aritmetica-fete)

Fig. no. VII.11. **Graphical representation of the evolution of the results obtained in the "Denisiuk's test" (arithmetic mean – girls)**

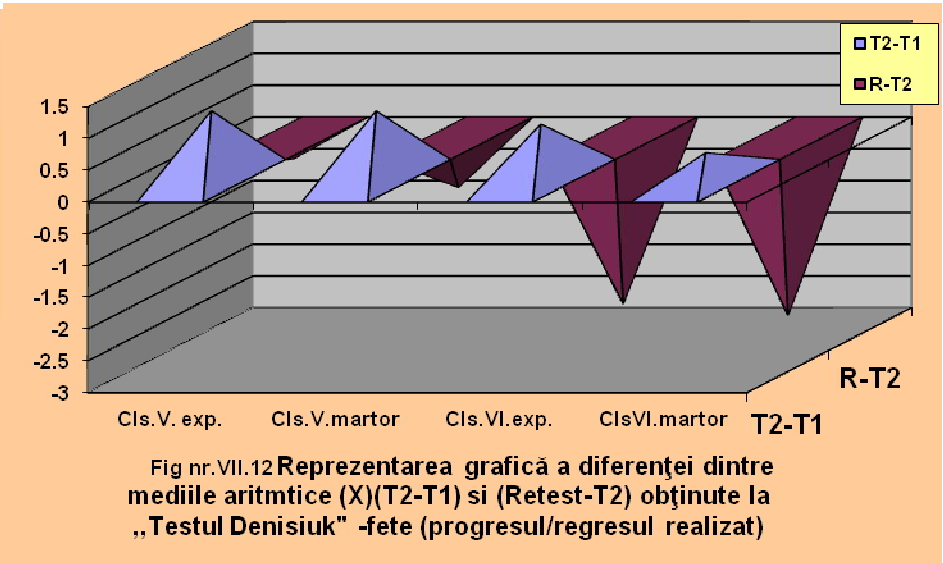

Fig nr.VII.12 Reprezentarea grafică a diferenţei dintre mediile aritmtice (X)(T2-T1) si (Retest-T2) obţinute la ,,Testul Denisiuk" -fete (progresul/regresul realizat)

Fig. no. VII.12. **Graphical representation of the difference between the arithmetic means (X) (T2-T1) and (Retest-T2) in the "Denisiuk's test" – girls (progress/regress)**

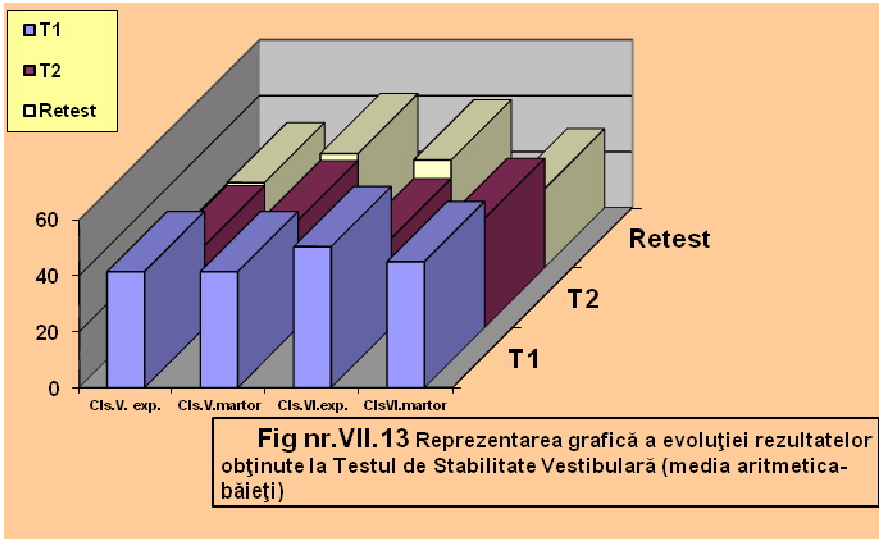

Fig nr.VII.13 Reprezentarea grafică a evoluţiei rezultatelor obţinute la Testul de Stabilitate Vestibulară (media aritmetica-băieţi)

Fig. no. VII.13. **Graphical representation of the evolution of the results obtained in the "Vestibular stability test" (arithmetic mean – boys)**

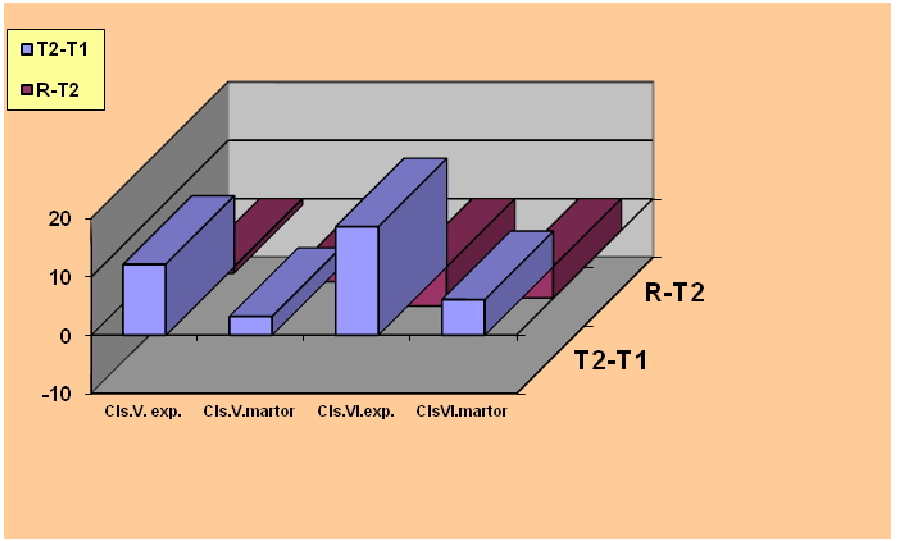

Fig. no. VII.14. **Graphical representation of the difference between the arithmetic means (X) (T2-T1) and (Retest-T2) in the "Vestibular stability test" – boys (progress/regress)**

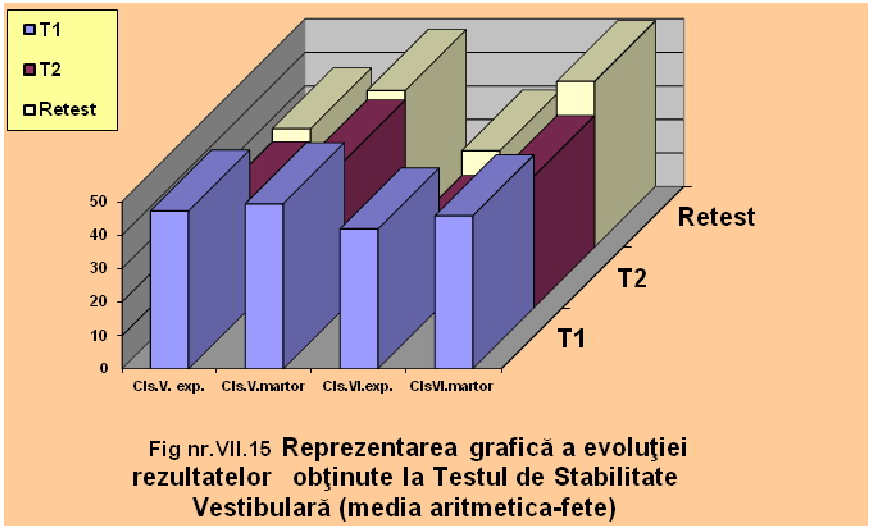

Fig nr.VII.15 **Reprezentarea grafică a evoluţiei rezultatelor obţinute la Testul de Stabilitate Vestibulară (media aritmetica-fete)**

Fig. no. VII.15. **Graphical representation of the evolution of the results obtained in the "Vestibular stability test" (arithmetic mean – girls)**

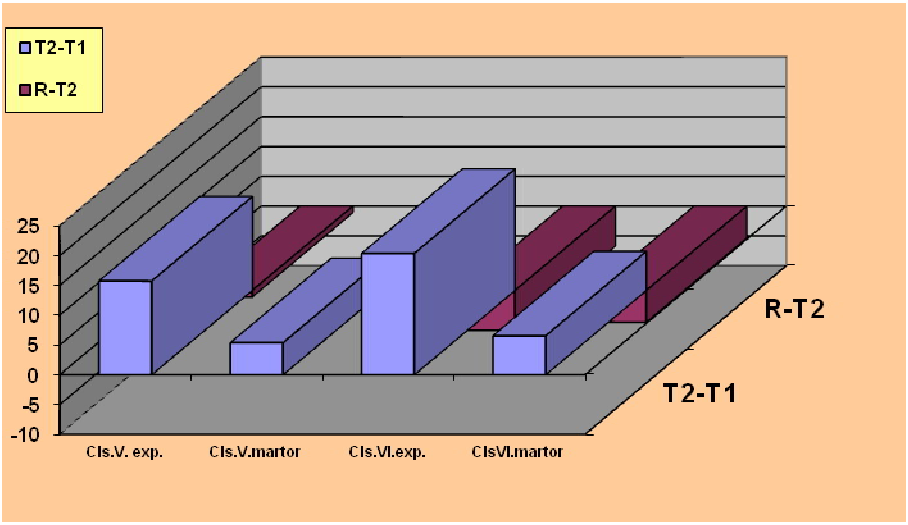

Fig. no. VII.16. **Graphical representation of the difference between the arithmetic means (X) (T2-T1) and (Retest-T2) in the "Vestibular stability test" – girls (progress/regress)**

Stage II – significance of the difference between the means

In the previous stage, following our analysis, we found an evolution of test results, clearly higher in the experimental groups than in the control groups, in all grades. Thus, we now intend to establish whether the differences between means, in the experimental groups, are statistically significant, i.e. whether the introduction of the independent variable leads to the improvement of the educational process.

The results can be seen in Table VII.9.

Tabel no. VII.9.

Test →	**Mobility**	**Stable equilibrium**	**Denisiuk's Test**	**Vestibular Stability**
Grade ↓	"t" Student	"t" Student	"t" Student	"t" Student
5th boys	3.63	2.9	2.9	2
6th boys	3.2	2.1	2.7	3.4
5th girls	3.1	2.2	2.4	2.1
6th girls	3.6	2.3	2.1	4

Result Analysis:

Mobility Test:

The calculated value of "t" is higher in all the experimental grades than the value of "t" at the significance threshold P = 0.05 and, except for the 6th grade boys, is higher even than the value of "t" at the significance threshold of 0.02. The highest value is achieved by the 5th grade boys and the 6th grade girls. Consequently, the null hypothesis is disproved, the differences between the results' means are statistically significant.

Stable Equilibrium Test

After calculating the "t" Student significance index, the differences between the initial mean and the final mean are highly significant in all the experimental groups under research, with a probability of 0.05%. The 5th grade boys have significant evolutions even with a probability of 0.02%. Thus, we can deduce that the educational process improves if we introduce creative exercises.

Denisiuk's Test

There are high evolutions of the results between the two tests, thus all the experimental grades improved significantly. The highest "t" value is accomplished by the boys. Except for the 6th grade girls, who have a relatively significant index with a 0.05% probability, the other grades show a strong evolution even at a 0.02% probability.

Vestibular Stability Test

There are highly significant differences with a probability of 0.05% between the initial mean of the group in the pre-experimental stage and the final mean in the post-experimental stage, after calculation of the "t" Student significance index, except for the 5th grade boys, who do not have

significant values. The highest value is achieved by the 6th grade girls; this is also because they had rather low values in the initial testing.

VII.2. CONCLUSIONS

The analysis, the statistical-mathematical processing and the interpretation of the achieved data provide a valuable material for the following conclusions:

1. The psychomotor skills are formed and developed by creating and applying an optimum and efficient number of specific exercises;
2. In order for the secondary school students to create specific exercises for psychomotor skill development, we took several steps to develop their creative potential, of which we mention the most important ones (according to us), such as:
    - Develop courage and self-confidence;
    - Develop fluency and flexibility of thought;
    - Raise interest and positive attitude towards basketball and towards everything that is new;
    - Tolerance for others' ideas;
    - Have the subjects face new problems and solve them;
    - Provide a psycho-social environment that favors good cooperation and promote collaboration.
3. We can say with certainty, based on the data that we obtained, that the exercises created and applied to the experimental grades are effective and contribute to the development of psychomotor skills;
4. If we compare the results of the experimental groups, we can see that the progress in skill development is higher when the subjects have a more positive attitude towards activity and when such activity has a greater personal significance for them;
5. After processing the data obtained in the final testing, we can see that the values achieved by the experimental groups are higher than the ones achieved by the control groups, in all the tests;
6. The retesting results stress the need to continue practicing the exercises; otherwise the development of psychomotor skills declines.
7. With some exceptions, where "t" has insignificant values, in most cases the difference between the means shows a very high significance index with a probability of 0.05%, and in some cases even with 0.02%, which reinforces the fact that the clearly high results of the experimental group are not accidental;
8. The development of psychomotor skills helps accelerate the learning of the basketball technical elements and tactical actions included in the curriculum, and it also contributes to development of the ability to create technical-tactical complexes by linking technical procedures and elements;
9. The obtained data confirm the possibility to solve certain negative aspects determined by subjective causes which depend on the teacher, using the methodological line proposed by us for the optimization of basketball teaching process in secondary school;
10. Although the significance of the correlation between tests registered very low values, the introduction of independent variables led to a slight strengthening of the influence relationships, this correlation being a little higher in the experimental groups than in the controls groups.
11. The students' attitude in class is very well reflected in their results. Therefore, the grades that I, as observer, considered more involved had higher performances.
12. The results of the pedagogical experiment show us that the exercises used to develop psychomotor skills are effective and we recommend that they be used in the school basketball methodology; however, such exercises must be adjusted and possibly supplemented according to the children's age, to the existing material basis and to their training level.

GENERAL CONCLUSIONS AND RECOMMENDATIONS

The purpose of this work was to discover new ways, new operational dimensions that lead in the end to the optimization and significant improvement of the psycho-pedagogical intervention in the basketball-themed physical education class.

Given the investigative issue of interest, the emphasis in the action-research was placed on the training and shaping interventions made in curricular contexts, at institutionalized level.

We tried to personalize the research, which was essentially a psycho-pedagogical and didactic one, taking into account the specificity of our topic, but at the same time we tried to give it a solid foundation, not only from the theoretical point of view, but also from the practical point of view.

The general conclusions are a synthesis of the other conclusions, resulted and presented after the determinative research and the experimental research.

The most significant are:

- There is a rich literature, both national and international, which addresses the game issue: basketball as a sport studied in the school physical education system;
- As a sport, basketball includes a large number of techniques, from the simplest ones to the most complex and highly difficult ones. Mastering such techniques requires and at the same time develops a significant number of psychomotor skills necessary in life;
- Fortunately, basketball requires minimum material conditions, that is why it can be learned at an optimum level also in the schools with modest material basis;
- The determinative research confirms the fact that psychomotor skills in the physical education class are less specified and highlighted, and sometimes they are even completely neglected;
- In basketball methodology, the modern methodological orientations and trends, as well as the specific methods are used very rarely in class and by a small number of teachers (answers to question no. 6 in the questionnaire for teachers);
- The determinative research confirms the fact that most schools do not have a proper didactic-material basis for an optimum physical education class in terms of class density, effort dynamics, differential treatment of students, use of active-participative methods;
- The scarce and inadequate material basis also determines a rather poor content of the curriculum and a less rigorous assessment by the teacher. The absence of these aspects prevents the creation and application of a large number of specific exercises for psychomotor skill development in students, skills that are necessary in learning basketball technical elements;
- The answers to the questionnaire for students show their weak theoretical training. We believe that not enough attention is paid to explaining the importance of knowing and practicing physical exercise in everyday life, and this implicitly leads to a lower interest in this sport;

The general conclusions presented above, resulting from the determinative research, underline also a series of negative aspects determined by both objective and subjective causes.

In our experimental research, we managed to diminish some of the negative aspects determined by subjective causes, which depend primarily on the teacher.

During the experiment, the main objective that we had in mind all the time was the development of psychomotor skills, mainly through creative exercises.

Due to the actions taken to develop and improve the creative potential, the subjects of the experimental group showed a rich pragmatic imagination in the creation and application of specific exercises for the development of psychomotor skills and in devising technical-tactical complexes.

The strategy that we used focused, as a first step, on the development of psychomotor skills through diverse and mainly creative exercises, then the techniques specific to basketball were special exercises for the development of such skills.

We believe that the applied statistical indexes (mean, standard deviation, coefficient of variation, significance of difference between means, correlation and determination coefficient) allowed us to obtain valid and significant results, based on which the interpretation of the research results was made.

After processing the data from the final testing, we can see that the values achieved by the experimental group are higher than the ones of the control group, in all tests. This demonstrates the effectiveness of the independent variable (strategy and applied exercises) and its influence on the dependent variable represented by results and progress.

The results achieved by the experimental group and their interpretation confirm the validity of our hypothesis and entitle us to make some proposals and recommendations:

- We propose in the basketball methodology the line approached by us, namely to place an emphasis on the development of psychomotor skills in students mainly through creative exercises as a prerequisite for effective learning of techniques;
- We recommend that the fundamental part of the lesson, the 5^{th} link, be focused for about 6-7 minutes on optimizing psychomotor skills and only after this step to proceed to the actual learning of the technical procedure or element;
- We propose the organization of basketball-themed methodical class observation in secondary school and the presentation of effective exercises for the development of psychomotor skills, on the one hand, and on the other hand, the presentation of problematic situations in which students must create and apply specific exercises on their own;
- In order to stimulate and enhance the creative potential in secondary school students, we propose the strategy that we used and presented in subsection 5.8;
- In order to capture students' attention and overcome monotony, we recommend to make them be more active by creating problematic situations consisting in finding and solving problems such as: linking the techniques that they know, introducing techniques in games and physical skills tracks;
- We also recommend that students be assessed and graded not only for their execution of individual techniques or tactical actions and their interest in creating and applying (practicing) exercises, but also for solving problematic situations such as: linking techniques, devising original technical-tactical complexes. With this assessment method, we give the opportunity to get high grades also to those students who are less physically gifted and/or lack motor skills for basketball.

This research, with our strategy and the achieved results, confirms the initial hypothesis and helps render basketball teaching to secondary school students (5^{th} and 6^{th} graders) more effective.

* * *

Bibliografie

1. Albu, A., Albu, C., (1999), *Psihomotricitatea,* Editura Spiru Haret, Iaşi.
2. Albulescu,V., (1981) – Baschet – mică enciclopedie, Editura Sport-Turism, Bucureşti.
3. Albulescu, I., (2007) – Doctrine pedagogice, Editura Didactică şi Pedagogică, Bucureşti.
4. Alexei,M., (2006), *Abordarea interdisciplinară în sport,* Editura Napoca Star, Cluj-Napoca.
5. Aniţei, M., (2007) – Psihologie experimentală, Editura Polirom, Iaşi.

6. Ardelean,T., (1990) – Particularităţile dezvoltării calităţilor motrice în atletism, Centrul de multiplicare I.E.F.S., Bucureşti.
7. Barth, B (1995) – Pregătirea pentru competiţie printr-un antrenament strategico-tactic complex, în rev. ,,Leistungsports" nr.1, 1995, tradus în „Teoria competiţiei", SDP nr 362-364, CCPS, Bucureşti.
8. Beard, B., (1985) – Basic basketball. The complete player., M.Kesend Publishing Ltd, N.Y.
9. Bejat, M., (1981), *Creativitatea în ştiinţă, tehnică şi învăţământ,* Editura Didactică şi Pedagogică, Bucureşti.
10. Belous, V., (1991) – Cultivarea şi dezvoltarea creativităţii, Rev. Forum, nr 7-8.
11. Bocoş, M., (2002) – Instruire interactivă. Repere pentru reflecţie şi acţiune, Editura Presa Universitară Clujeană, Cluj-Napoca.
12. Bocoş, M., (2003), *Cercetarea pedagogică. Suporturi teoretice şi metodologice,* Editura Casa Cărţii de Ştiinţă, Cluj-Napoca.
13. Bocoş, M., (2007) – Teoria şi practica cercetării pedagogice, Editura Casa Cărţii de Ştiinţă, Cluj-Napoca.
14. Bocoş, M., (2007), *Didactica disciplinelor pedagogice. Un cadru constructivist,* Editura Presa Universitară Clujeană, Cluj-Napoca.
15. Bocoş, M., *Instruirea interactivă. Repere pentru reflecţie şi acţiune* (ediţia a II-a revăzută), Editura Presa Universitară Clujeană, Cluj-Napoca.
16. Bocu, T., (1997), *Selecţia în sport,* Editura Dacia, Cluj-Napoca.
17. Boden, M.A., (1994) – Dimensions of creativity, the MIT Press, England.
18. Bompa, T.O., (2003), *Totul despre pregătirea tinerilor campioni,* Editura Ex Ponto, Bucureşti.
19. Bratu, B., (1972) – Stimularea creativităţii în activitatea şcolară, în ,,Analele univ. Bucureşti" Pedagogice.
20. Brown, H., (1995) - Basketball′s box offense, Masters Press, Indianapolis.
21. Brown, H., (1997) – Preparing for special situations, Editura Master Press, Indianapolis.
22. Brown, L., Ferrigno,V., Santana, J., (2000) – Trainning for speed, agility and quickness, Editura Human Kinetics, Illionis.
23. Cârstea, Gh., (1996) – Teoria şi metodica educaţiei fizice şi sportului, Editura A.N.E.F.S., Bucureşti.
24. Cârstea, Gh., (1997) – Educaţia fizică. Teoria şi bazele metodicii, Editura A.N.E.F.S., Bucureşti.
25. Cârstea, Gh., (2000), *Teoria şi metodica educaţiei fizice şi sportului,* Editura Anda, Bucureşti.
26. Cesari, C., (1989) – Les tests psychologigues, Marabout-Alleur (Belgique).
27. Chiş, V., (2001), *Activitatea profesorului între curriculum şi evaluare,* Editura Presa Universitară Clujeană, Cluj-Napoca.
28. Cirla, L., (1999), *Înot, aptitudinile psihomotrice şi pregătirea tehnică,* Editura Printech, Bucureşti.
29. Colibaba-Evuleţ, D., Bota, I., (1992), *Jocuri sportive. Teorie şi metodică,* Editura Aldin, Bucureşti.
30. Chelcea, S., (1982) – Experimentul în psihosociologie, Editura Ştiinţifică şi Enciclopedică, Bucureşti.
31. Cerghit, I., (2002) – Sisteme de instruire alternative şi complementare. Structuri, stiluri şi strategii, Editura Aramis, Bucureşti.
32. Cerghit, I., (2006) – Metode de învăţământ, Ediţia a IV-a revăzută şi adăugită, Editura Polirom, Iaşi.
33. Cerghit, I., Neacşu, I., (2001) – Prelegeri pedagogice, Editura Polirom, Iaşi.
34. Chiriţă, G., (1976) – Funcţia formativă a activităţilor corporale, Editura Sport-Turism, Bucureşti.
35. Chiş, V., (2005) – Pedagogia contemporană – Pedagogia pentru competenţe, Editura Casa Cărţii de Ştiinţă, Cluj-Napoca.

36. Cook, T.D., Campbell, D.T. (1979) – Quasi-experimentation: design and analysis issue for field settings, Houghton Mifflin, Boston.
37. Cosmovici, A., (1974) – Psihologia diferenţiată, Editura Universităţii ,,Al.I.Cuza", Iaşi.
38. Cosmovici, A., Iacob, L., (2005), *Psihologia şcolară,* Editura Polirom, Iaşi.
39. Cosmovici, A., (coord.), (1998), *Psihologie. Compendiu pentru bacalaureat şi admitere la facultate.* Editura Polirom, Iaşi.
40. Crăciun, M., (2005), *Introducere în psihologia sportului,* Editura Risoprint, Cluj-Napoca.
41. Creţu, C., (1997) – Psihopedagogia succesului, Editura Polirom, Iaşi.
42. Cucoş, C., (1996), - *Pedagogie*, Editura Polirom, Iaşi.
43. Cucoş , C., (2008) – Educaţia – Iubire, edificare, desăvârşire, Editura Polirom, Iaşi.
44. Dancsuly, A., Ionescu, M., Radu, I., Salade, D., (1979) – Pedagogie, Editura Didactică şi Pedagogică, Bucureşti.
45. De Landdheere, V., De Landsheere, G., (1979) – Definirea obiectelor educaţiei, Editura Didactică şi Pedagogică, Bucureşti.
46. Demeter, A., (1981) – Bazele fiziologice şi biochimice ale calităţilor motrice, Editura Sport-Turism, Bucureşti.
47. Dodan, M., (2004) – Influenţa unor factori ai personalităţii asupra performanţelor de coordonare motrică, Rev. Ştiinţa Sportului.
48. Dragnea, A., (1996) – Antrenamentul sportiv, Editura P.R.A., Bucureşti.
49. Dragnea, A., Bota, A., (1999), *Teoria activităţilor motrice,* Editura Didactică şi Pedagogică R.A., Bucureşti.
50. Dragnea, A., (coord.), (2000), *Teoria educaţiei fizice şi sportului,* Editura Cartea Şcolii, Bucureşti.
51. Dragomir, P., Scarlat, E., (2004), *Educaţia fizică şcolară,* Editura Didactică şi Pedagogică, Bucureşti.
52. Dungaciu, P., (1982) – Aspecte ale antrenamentului modern, Editura Sport-Turism, Bucureşti.
53. Epuran, M., (1983) – Psihologia Educaţiei Fizice, Editura Sport-Turism.
54. Epuran, M., (1972) – 63 termes de psychologie du sport, Bucureşti.
55. Epuran, M., (1990) – Modelarea conduitei sportive, Editura Sport-Turism, Bucureşti.
56. Epuran, M., (1992) – Metodologia cercetării activităţilor corporale, Editura Sport-Turism, Bucureşti.
57. Epuran, M., (1999), *Psihologia sportului* (ediţia a II-a), Societatea Ateneul Român, Universitatea Ecologică, Bucureşti.
58. Epuran, M., Holdevici, I., (1993) – Psihologie (compediu). Multiplicat la A.N.E.F.S., Bucureşti.
59. Epuran, M., Holdevici, I., Toniţa,F., (2001), *Psihologia sportului de performanţă. Teorie şi practică,* Editura Fest, Bucureşti.
60. *(2001), Gid metodologic de aplicare a programei de educaţie fizică şi sport* – învăţîmânt primar, gimnazial şi liceal, Ministerul Educaţiei şi cercetării, Consiliul Naţional Pentru Curriculum, Bucureşti
61. Famause, J.,P., Durand, M., (1988) – Aptitudes et performance motrice, Edition ,,Revue E.P.S.", Paris.
62. Foster, B., (1983) – Conditioning for basketball, a quide for coaches and athletes, Leisure Press, West Point, N.Y.
63. Grosu, E.,F.,(2002) – Psihomotricitate şi gimnastică educativă, vol. I, Editura G.M.I., Cluj-Napoca.
64. Grosu, E.,F., (2001) – Învăţarea motorie şi performanţa în sport, Editura G.M.I., Cluj-Napoca.
65. Harre, D., (1973) – Teoria antrenamentului, Editura Stadion, Bucureşti.
66. Hertz, A., (1985) – Apprentisages psychomoteur, Editura Vigot.
67. Hollander, Y., (1997) – The pro basketball encyclopedia, Editura Crown Book, L.A.

68. Horghidan, V., (1997), *Metode de psihodiagnostic,* Editura Didactică şi Pedagogică R.A., Bucureşti.
69. Horghidan, V., (2000) – Problematica psihomotricităţii, Editura Globus, Bucureşti.
70. Ionescu, M., Radu, I., (1987) – Experienţa didactică şi creativitatea, Editura Dacia, Cluj-Napoca.
71. Ionescu, M., Chiş, V., (1992) – Strategii de predare şi învăţare, Editura Ştiinţifică, Bucureşti.
72. Ionescu, M., (coord.), (1998), *Educaţia şi dinamica ei*, Editura Tribuna Învăţământului, Bucureşti.
73. Ionescu, M., (2000), *Demersuri creative în predare şi învăţare,* Editura Presa Universitară Clujeană, Cluj-Napoca.
74. Ionescu, M., Radu,I., Salade, D., (coord) (2000) – Studii de pedagogie aplicată, Editura Presa Universitară, Cluj-Napoca.
75. Ionescu, M., Chiş, V., (coord.), (2001), *Pedagogie. Suporturi pentru formarea profesorilor,* Editura Presa Universitară Clujeană, Cluj-Napoca.
76. Ionescu, M., Radu, I., (coord.) (2001), *Didactica modernă.* Ediţia a II-a, revizuită, Editura Dacia, Cluj-Napoca.
77. Ionescu, M., (2006) – Schimbări paradigmatice în educaţie şi învăţare, Editura Eikon, Cluj-Napoca.
78. Ionescu, M., (2007), *Instrucţie şi educaţie,* Editura Universităţii de Vest „Vasile Goldiş", Arad.
79. Janner, C., (1985) – Forme, metode şi mijloace de dezvoltare a calităţilor coordinative – îndemânarea la tinerii aflaţi în perioada pubertară. Rez. Tezei de doctorat, Bucureşti.
80. Jean, P., (1973) – Construirea realului la copil, Editura Didactică şi Pedagogică, Bucureşti.
81. Joiţa, E., (2000) – Managementul educaţional, Editura Polirom, Iaşi.
82. Jurcău, N., (coord.), (2001), *Psihologia educaţiei,* (ediţia a IV-a), Editura U.T.Pres, Cluj-Napoca.
83. Karl, G., Stotts, T., Johnson, P., (1997) – 101 basketball rebounding drills, Editura Coaches Choice Book, Illionis.
84. Kestner, J., (1996) – Coaching youth basketball, Editura Human Kinetics, Illionis.
85. Kramar, M., (1997), *Psihologia culturii fizice şi a sportului,* Editura Fundaţia „Vasile Goldiş", Arad.
86. Krause, J., Meyer, D., Meyer, J., (1999) – Basketball skils and drills, Editura Human Kinetics, Illionis.
87. Lafon, R., (1963) – Vocabulary of psycho-pedagogy, PVF, Paris.
88. Landsheere, V., Landsheere, G., (1979) – Definirea obiectelor educaţiei (traducere), Editura Didactică şi Pedagogică, Bucureşti.
89. Landau, E., (1979), *Psihologia creativităţii,* Editura Didactică şi Pedagogică, Bucureşti.
90. Le Boulch (1974) – Les facteurs de la valeur motrice, These de medecine.
91. Lozincă, I., Marcu, V., (2005), *Psihologia şi activităţile motrice,* Editura Universităţii din Oradea.
92. Luca, A.,(1997) – Gimnastica în ciclul gimnazial, Editura Dosoftei, Iaşi.
93. Luca, A., (1998) – Gimnastica în şcoală, Editura Universităţii Al.I.Cuza, Iaşi.
94. Myers, A., Hansen, C., (2005) – Experimental psychology. Wadsworth Publishing Company.
95. Manno, R., (1996) – Bazele antrenamentului sportiv, SDP 371-374, CCPS, Bucureşti.
96. Mikes, J., (1986) – Basketball fundamentals, Editura Human Kinetics, Illionis.
97. Michalko, M., (2008) – Secretele creativităţii, Editura Amaltea, Bucureşti.
98. Mitrea, Gh., Mogoş, Al., (1980) – Metodica educaţiei fizice şcolare, Editura Sport-Turism, Bucureşti.
99. Muja, J., (1984) – Spaţiile verzi şi amenajarea teritoriului, Editura Ceres, Bucureşti.
100. Munteanu, A., (1994), *Incursiuni în creatologie,* Editura Augusta, Timişoara.
101. Nation, J.R. (1997) – Research methods, Pretience Hall. Upper Saddle River, New Jersey.

102. Neacşu, I., (1978) – Motivaţie şi învăţare, Editura Didactică şi Pedagogică, Bucureşti.
103. Nicola, I., (1996) – Tratat de pedagogie şcolară, Editura Didactică şi Pedagogică R.A., Bucureşti.
104. Noveanu, E., Potolea, D., (2007) – Ştiinţele educaţiei – dicţionar enciclopedic, Volum I, Editura Sigma, Bucureşti.
105. Noveanu, E., Potolea, D., (2007) – Ştiinţele educaţiei – dicţionar enciclopedic, Volum II, Editura Sigma, Bucureşti.
106. Oprescu, V., (1991) – Aptitudini şi atitudini, Editura Ştiinţifică, Bucureşti.
107. Paşcan, I., (2008) – Metodica predării gimnasticii în şcoală, Editura Casa Cărţii de Ştiinţă, Cluj-Napoca.
108. Pieron, H., (2001) – Vocabularul psihologiei. Editura Univers enciclopedic, Bucureşti.
109. Pintilie, M., (2002) – Metode moderne de învăţare-evaluare, Editura Eurodidact, Cluj-Napoca.
110. Pop, H., Roman, Gh., (1998) - Baschet-teorie şi metodică, Editura Quo Vadis, Cluj-Napoca.
111. Popescu, I.C., (1981) – Elemente de psihologie şi epistemologie genetică, Editura Ştiinţifică şi Enciclopedică, Bucureşti.
112. Popescu-Noveanu, P., (1970) – Introducere în psihologia militară, Editura Militară, Bucureşti.
113. Predescu, T., Negulescu, C., (1998) – Baschet-curs de specializare an IV, ANEFS, Bucureşti.
114. Radu, I., (coord) (1991) – Introducere în psihologie, Editura Sincron, Cluj-Napoca.
115. Raţă, G, Raţă, Gh., (2008) – Educaţia fizică şi metodica predării ei, Editura PIM, Iaşi.
116. Raţă, Gh., (2008) – Didactica educaţiei fizice şi sportului, Editura PIM, Iaşi.
117. Rădulescu, Şt., (2006) – Metodologia cercetării ştiinţifice, Editira Didactică şi Pedagogică, Bucureşti.
118. Robert,J.,S., (2005) – Manual de creativitate, Editura Polirom, Bucureşti.
119. Rotaru, T., Iluţ, P., (1999) – Ancheta sociologică şi sondajul de opinie, Editura Polirom, Iaşi.
120. Roşca, Al., Zorgo, B., (1972) – Aptitudinile, Editura Ştiinţifică, Bucureşti.
121. Salade, D., (1995) – Educaţie şi personalitatea, Editura Casa Cărţii de Ştiinţă, Cluj-Napoca.
122. Salade, D., (1998) – Dimensiuni ale educaţiei, Editura Didactică şi Pedagogică, Bucureşti.
123. Sarthou, J., (2009) – Differenciation pedagogiques et EPS. Sursa web: http//membres.lycos.fr/epsrugby/differenciationpedagogique.htm.
124. Scarlat, M., Scarlat, E., (2003) – Educaţie fizică şi sport, Editura Didactică şi Pedagogică, Bucureşti.
125. Stoica, A., (1983) – Creativitatea elevilor. Posibilităţi de cunoaştere şi educare, Editura Didactică şi Pedagogică, Bucureşti.
126. Schaub, H., Zenke, G., (2001) – Dicţionar de pedagogie, Editura Polirom, Iaşi.
127. Stoica, A., (1992) – Blocajele creativităţii, Rev de psihologie nr.4.
128. Şchiopu, U., Verza, E., (1997) – Psihologia vârstelor, Editura Didactică şi Pedagogică, Bucureşti.
129. Teodorescu, L., (1975) – Probleme de teorie şi metodică în jocurile sportive, Editura Sport-Turism, Bucureşti.
130. Thomas, R., (1995) – Aptitudinile motrice. Teste şi măsurători pentur tinerii sportivi, Editura CCPS, Bucureşti.
131. Tudor, V., (1999) – Capacităţile condiţionale, coordinative şi intermediare – componente ale capacităţii motrice, Editura R.A.I., Bucureşti.

132. Vernon, P.E. (1952) – La structure des aptitudes humanies (traducere). P.U.F. Paris.
133. Voiculescu, E., Voiculescu, F., (2007) – Măsurarea în ştiinţele educaţiei, Institutul European, Iaşi.
134. Wallon, H., (1975) – Evoluţia psihologică a copilului, Editura Didactică şi Pedagogică, Bucureşti.
135. Weinek, J., (1997) – Manuel d'entraînement, 4 edition, Editura Vigot, Paris.
136. West, M.,A., Farr, J., L., (1982) – Innovation and creativity at Work, Psyhological and Organizational Strategies, willey, England.
137. Zaţiorski, V.M. (1968) – Calităţile fizice ale sportului. I.C.F., fond didactic, Bucureşti.
138. xxx, Gândul, 27 iulie 2007
139. www.basketballdrills.com
140. www.youthbasketball.com
141. www.basketball.is
142. www.coachingbasketball.com
143. www.ftr.ro

* * *

Appendices

Appendix.V.1

Questionnaire
(for teachers)

In order to optimize in pupils in the 5th – 8th forms the basketball trening comprised in the curriculum, zour opinion regarding this issue would be of a great assistance.

The brief and sincere answers will have a significant value in improving the instructive process of the basketball taught with the 5th-8th forms.

We thank you in advance

Graduated from the Faculty_____

Lenght of teaching service _____

Didactical degree _____

Specialization_____

Gender _____

Date_____

1. What is zour opinion about the new physical education curriculum for the basketball taught in the 5th-8zh forms?

_____
_

2. What material resources do exist for basketball tranning?

_____
_____

3. In your opinion, which are the most important psychomotor skills required by the basketball learning?

_____
_____

4. What is your opinion regarding the pupils in the 5th-8th forms attitude towards the basketball lessons?

_____
_____

5. Which are the teaching methods applied by you for the learning of the basketball elements within 5th-8th forms?

_____ _____
_____

6.In your opinion, which would be the causes determining an insufficient learning of some basketball technical procedures with 5th-8th forms?

_____ _____
_____

7. do you introduce atractive exercises as a game with these forms?
No
Yes . _____

_____

8. How do you manage with the theoretical trening for the basketball lessons ?

_____
_____

_____

9. Should you have any suggestions regarding the improvement of the teaching activity with the basketball trening. Please name.

* * *

Appendices

Appendix.V.2

Questionnaire
(for pupils)

Age_____

Form_____

School_____

Gender_____

Date_____

Please read carefully the questions and try t ogive ample answers to each item.
We are highly interested in receiving your opinions regarding the issue in this questionnaire.
Please do not omit any question.
Thank you.

1. How many hours of physical education or sports activities would you have per week?

----------hours of physical education.
……hours of sports activity.

2. What do you like/dislike with the physcal education class?

I like_____ _____

I dislike _____ _____

3. What sports branch would you like to perform preponderantly with the physical education class?

_____

_____ _____

4. What basketball elements have you learnt during the current school year? Please name.

_____ _____

_____ _____

5. In your opinion, what qualities are requisite to the basketball elements learning?

_____ _____ _____

6. Do you think your activity in the basketball trening is important?

_____ _____

7. Which one the learnt basketball skills was helpful to you in a given circumstance? How and in what situation?

_____ _____

8. Do you consider that the learnt basketball exercises may contribute to a more rapid approach to some technical exercises of other sports discipline?
   No
   Yes. Please name.

9. Do you practice systematically the basketball game outside the physical education classes? If yes, where?
   No
   Yes