

COMPARATIVE STUDY CONCERNING THE LEVEL OF THE PUPILS' COGNITIVE COMPETENCES IN PHYSICAL EDUCATION, PRIMARY SCHOOL

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Abstract

The research determines the contribution of the physical education lesson concerning the development of the cognitive sphere of the fourth grade, as a finish moment of the primary school, by comparing the classes where the didactic process was achieved by the teacher (2005) and by the physical education teacher (2009) and identifies the relations between the objectives of the physical education and the objectives of the cognitive education.

From the evaluation's function view point it is consist that 36,20 % from questioned pupils of the 2009 graduates and 63,8 % from 2005 graduates have gaps concerning the evaluated cognitive sphere, all these being demonstrated in the domain of the retained knowledge transfer from a discipline to another, or in the adaption of the already obtained knowledge.

Introduction

The cognitive development theory developed by Jean Piaget has offered a methodological framework that didn't bonded only the cognitive functions between them, by explaining these functions in usual processes terms (assimilation and adaptation; operations formation, egocentrism) but emphasizing the cognitive development of the children, from an age stage to another, underlining to continuity that exists at the children effort level concerning the knowledge of the world. (Neicu D., 2008, p.56)

The cognitive educations develop the education snail, explaining and stipulating it's found, solving a base problem in the same time: the decreasing of the disparity, by active education, between the exponential information growth, as volume, complexity, diversity and the children capacity to assimilate, on prior qualitative criterion, to approach them in a critic way, to apply them efficiently, but also to develop them by creativity. (Joița E.,p 38)

Purpose, hypothesis

The research purpose is to determine the contribution of the physical education lesson in the development of the cognitive sphere for the fourth grade, as a finish moment of the primary school by comparing the classes where the didactic process was made by the teacher (2005) and physical education teacher (2009) and to identify the relations between the objectives of the physical education and cognitive education objectives.

Research hypothesis

In the twenty first century, where the permanent education problem becomes a necessity of the modern human being, the physical education has the task to teach the pupil, the adult from tomorrow, those contents of the curricular aria that will help him to define his education, that will be used during the hole life, in order to maintain a well health and to spend in a pleasant and useful way the leisure time.

- The compulsory motive and theoretical knowledge from the syllabus specific to the curricular area "Physical education and sport" for the "fundamental acquisitions" and "development" curricular cycles, give to the pupils from the primary cycle cognitive competencies if the education process is realized by the domains specialist – physical education and sport teacher.

- The elaboration and utilization of a didactical strategy that is focused on objectives among are the didactical objectives from the un-motive plan, realized by the physical education and sport teacher, determines the education of some cognitive competencies that are necessary to complete the competences sphere of the primary cycle graduates, according the performance standards elaborated by M.E.C.I.

Content, methodology

I. the relationship between the physical and cognitive education

The objectives of the cognitive education are reflected at the physical education and sport syllabus level too, at all curricular cycles, during the whole preuniversity education. The physical education together

with the other disciplines that belongs to the education plan for the primary cycle, has a consistent intake in the integral education of the individual, inducing many benefic effects at the motive and biological development, but psychological too. (Mihăilescu L., Bulgaru, E.,2005,p30-31)

Table 1. The cognitive activities of the pupil

Operations	Characteristics	Conjugation verbs
Reproduction (repetition)	-to know by heart; -it is repeated what was learned; -identity, discrimination and bond operators (S-R);	-to spell out; -a describe; -a admit
Conceptualization •Synthetic (extensive) •Analytic (comprehensive)	- the identification of a classroom or an object in report with a classroom - refers to concrete/abstract objects, relationships and structures;	-to admit; -a classify
The application • pure • evocation	The association between a particular answer and a concrete situation with a type of situations and the answers class based some rules (algorithm).	-to find; -to calculate; -to determine.
Extrapolation • of the real • of the possible	- to extract from a situation or a structure an element, an information. - is prepared by previous activities (conceptualization, applications)	-to discover; -to research
The mobilization and association • convergent • divergent	Finding some new answers based on the cognitive repertoire and respecting some conditions: -a single product/a small number(convergent); -more products (divergent).	-to imagine; -to find.
Complex activities and problem solving	In front of a knew situation, the pupil must find without knowing before the algorithm, a solution that should respect some conditions: -the object is not familiar -the operators are not familiar; -the product is not familiar;	-to calculate; -to determine

II. The relation between the cognitive and physical education objectives - primary cycle**Table 2. The cognitive and physical education objectives – primary**

Cr. No	The cognitive education objectives	The physical education objectives – fundamental acquisition cycle	The physical education objectives – development cycle
1	To learn to know • The acquisition of some informational units. • The understanding of the own environment. • To understand and to discover. • The independent thinking encouragement.	The maintaining of the optimal health state of the pupils and the increasing of the adaptation capacity to the environment factors. The knowledge of the quenching factors. The approximation of the self physical development and the prevention of the in deviation from it. • Knowledge the somatic indexes and their interpretation by age; • The determination and evaluation of the physical development level; • Knowledge the deviation from a normal physical development.	Favoring the maintenance /improvement of the health state and the providing of the harmonious physical development, according to the age and sex characteristics • Knowledge the main indicators of the health state and the of maintenance/improvement ways. • Knowledge the morphologic and functional parameters specific to the age and sex.
2	To learn to do • Problem solving, situations, tasks. • Experiences accumulation. • Cognitive experience.	The independent exercise of the physical exercises, games and different sports. The utilization of the skills learned during the physical education lesson and leisure time.	The assimilation of the base technical proceedings, individual and collective tactical actions necessary to practice in rules condition some sportive discipline in school and in leisure time. • Solving problems, situations, tasks; • Cognitive experiences accumulation.
3	To learn to live with the others	The independent practice of the physical exercises, games and different sports.	The development of the personality features favorable to the social integration and reinsertion.

	<ul style="list-style-type: none"> • prejudices defeating; • learning to respect the others; • gating the group success; • cooperation. 	<p>Playing the games with the others children. Respecting the team-mates and the opponents. The usage of the knowledge accumulated in games in order to obtain the victory.</p> <p>The expression of the team spirit and competition, function of an accepted rules system.</p> <ul style="list-style-type: none"> • cooperation 	<p>The assimilation of the base technical proceedings, individual and collective tactical actions necessary to practice in rules condition some sportive discipline in school and in leisure time.</p> <ul style="list-style-type: none"> • The prejudices beating • Cooperation.
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III. The determination of the cognitive competences of the pupils after the primary cycle, comparison between teacher and physical education teacher promotion, by using 12 items.

Questionnaire

1. *The dribbling is specific to the:*

- a) basketball game;
- b) handball game;
- c) both variants.

2. *The forward rolling from squat to squat is an element of:*

- a) acrobatic gymnastics;
- b) sportive game;
- c) jump.

3. *The hot step stride rule is:*

- a) opposite arm and leg;
- b) the same part arm and leg;
- c) both variants.

4. *The speed running helps you to:*

- a) travel quicker;
- b) travel slower;
- c) travel more.

5. **Usually the formation alignment in one row from the start of the lesson is realized after:**

- a) height;
- b) weight;
- c) age.

6. **The exercises realized in the start of the lesson must:**

- a) prepare the organism for the effort;
- b) harmonious development of the body;
- c) both variants.

7. **The exercises that are learned in the physical education and sport lesson had influence and helps:**

- a) only during lesson;
- b) only beside the lesson;
- c) during and besides it.

8. **Which one of the following environment factors can help to the organism hardening?**

- a) sun;
- b) air;
- c) non of these.

9. **The weight and height of the body must be:**

- a) equal;
- b) weight must be bigger then height;
- c) weight must be smaller then height;

10. **To maintain the health state it is necessary to practice at least:**

- a) three times a week;
- b) three times a month;
- c) three times

11. **The physical education and sport equipment must be:**

- a) different from the others classes;

- b) the same as the others classes;
c) both variants.

12. After finishing the physical education lesson you need:

- a) towel;
b) shirt for change;
c) non of these objects.

Discussions, interpretation

It is noticed that the school syllabus formulates cognitive objectives in the non-motive sphere too. The cognitive objectives exceeds the classical objective of the knowledge acquiring because by the successive acquisitions realized during the curricular cycles it is seeking the development of the skills, abilities, capacities and competencies of the pupils, on multiple plans, determining:

- the passage from the primary processing of the information to the abstract one and to the modeling of the memory systems, in order to complete the cognitive system in a personalized, affirmed, independent and creative way;
- knowledge and operating with cognitive analyses models of the tasks;
- the practice and assimilation of the primary processing operations, at the sensorio-perceptive level, perceptive schemes training, analysis application, utilization of the different models in the identification and analyses of the objects and information;
- correct and conscious training of the mental images as organizations of the different representations, previous obtained by simple knowledge, the diversifications of the representation ways and operations, cognitive systematization as mental imagistic;
- the possession and conscious adequate utilization of the knowledge processing in memory, mnezic systems features and instruments, organization models of the stored knowledge;
- the conscious and utilization of the anilities, cognitive capacities that were obtained during the reconsider of the cognitive nature specific to the other dimensions of the personality affirmation: morality, aesthetics, etc.

In table three are synthesized the answers of the two investigated groups and the number of the in quested subjects. Our research confirmed that the achievement of the physical education objectives concerning the knowledge must obtain new dimensions in the didactic and evaluation specific process.

Based on the certification function of the pupils' competences and knowledge at the end of the primary cycle, the inquest confirms the accomplishment of the physical education objectives in a 63,80 % to the 2009 promotion concerning the education of some competences regarding to the following plans: organization, socialization and theoretical. On the other hand the 2005 promotion realizes a 32, 8 %.

From the evaluation function view point we found that 36,20 % from the in quested pupils of the 2009 promotion and 63,8 % of the 2005 promotion have gaps concerning the evaluated cognitive area. All are demonstrated in the domain of the notions' transfer obtained from a discipline to another or the maladjustment of the already learned knowledge in new situations.

Table 3. The compared parameters from the inquest

Pupils no.		Item no.	Pupils answers						Percentual representation					
2005	2009		a		b		c		a		b		c	
			2005/2009	2005/2009	2005/2009	2005/2009	2005/2009	2005/2009	2005/2009	2005/2009	2005/2009	2005/2009	2005/2009	2005/2009
120	88	1	80	40	8	4	32	44	66,6%	45%	6,6%	4%	26,6%	50%
120	88	2	43	75	22	9	55	4	35,8%	85%	18,3%	10%	45,8%	4%
120	88	3	55	81	5	5	60	2	45,8%	92%	4,1%	5%	50%	2%
120	88	4	48	82	12	2	60	4	40%	93%	10%	2%	50%	4%
120	88	5	27	80	10	2	83	6	22,5%	90%	8,3%	2%	69,1%	6%
120	88	6	32	81	5	4	83	5	26,6%	90%	4,1%	2%	69,1%	6%
120	88	7	78	15	12	2	30	71	65%	17%	10%	2%	25%	80%
120	88	8	30	58	22	19	68	22	25%	65%	18,3%	21%	56,6%	25%
120	88	9	81	30	32	15	7	43	67,5%	34%	12,5%	17%	5,8%	48%
120	88	10	41	85	11	0	65	3	34,1%	96%	9,1%	0%	54,1%	3%
120	88	11	26	68	24	16	70	5	21,6%	77%	20%	18%	58,3%	5%
120	88	12	75	19	16	68	29	11	62,5%	21%	13,3%	77%	24,1%	12%

Conclusions and suggestions

Is required that the didactic process should be directed by the specialty teacher and the introduction in the school syllabus, to both curricular cycles realized in the primary cycle of some contents from self knowledge plan, from anatomic, morphologic and physiologic perspective of the own body.

The interrelationship between the cognitive education objectives and the frame work objectives of the physical education for this cycle may be an objective parameter concerning the start of some reorientations of the didactic contents and strategies in the physical education and sportive activities lessons bur also a scientific criterion that can sustain the necessity of a greater number of physical education classes in the nucleus curriculum.

In order to develop the cognitive sphere we propose the introduction of some new means and materials in the physical education lesson that can represent a greater support of knowledge, a reorganizational strategy because the traditional organizational and communication means that are specific to the physical education lesson doesn't provide the necessary framework of an optimal development in the psycho-motive, cognitive and affective plan, underlining, most of the time the contribution in the motive plan.

We consider that the physical education objectives are generous, well formulated for this education cycle but the knowledge obtained by the pupils doesn't reflect an activity that is focused on the awareness of the pupils concerning: the morphology and physiology of the body, the theoretical knowledge concerning the way that the motive activities realized by the pupils in their leisure time can be organized.

STUDIU COMPARATIV PRIVIND NIVELUL COMPENȚELOR COGVITIVE ALE ELEVILOR LA EDUCAȚIE FIZICĂ, CICLUL PRIMAR

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Cuvinte cheie: educație cognitivă, educație fizică, obiective, competențe cognitive

Rezumat

Teoria dezvoltării cognitive a lui Jean Piaget a oferit un cadru metodologic care nu a relaționat doar diferitele funcții cognitive între ele, prin explicarea lor în termenii de procese obișnuite (similare și acomodare; formare de operații, egocentrism) ci a pus în evidență și dezvoltarea cognitivă a copiilor, de la o etapă de vârstă la următoarea, subliniind astfel, continuitatea care există la nivelul eforturilor copiilor de a cunoaște lumea (Neicu D., 2008, p.56)

Educatia cognitivă dezvoltă spirala formativului, explicând și specificând fondul acestuia respectiv realizează *rezolvarea unei probleme de bază*: micșorarea decalajului, prin formare activă, între creșterea exponențială a informațiilor, ca volum, complexitate, diversitate și capacitatea copiilor de a le asimila, pe criterii prioritare calitative, de a le aborda critic, de a le aplica eficient, dar și de a le dezvolta prin creativitate (Joița E., p 38)

Scopul cercetării este acela de a determina contribuția orei de educație fizică în dezvoltarea sferei cognitive a elevilor clasei a IV-a, ca moment de finalizare a ciclului primar, prin comparație între clasele la care procesul didactic a fost gestionat de învățător (2005) și de profesorul de educație fizică (2009), de identificare a relațiilor dintre obiectivele educației fizice și obiectivele educației cognitive.

Ipotezele cercetării

În mileniul III, în care problema educației permanente devine o necesitate a omului modern, educației fizice îi revine sarcina de a-l învăța pe elev, adultul de mâine, acele conținuturi ale ariei curriculare specifice cu care își va desăvârși educația, pe care le va utiliza pe parcursul întregii vieți, în scopul menținerii sănătății și petrecerii plăcute și utile a timpului liber.

• Cunoștințele teoretice și motrice obligatorii din programa școlară a ariei curriculare "Educație fizică și sport" pentru ciclurile curriculare "achiziții fundamentale" și "dezvoltare",