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THE ASSESSMENT OF MOTOR AND COGNITIVE TRAINING LEVEL OF HIGH SCHOOL STUDENTS AND THE ELABORATION OF THE SYLLABUS REGARDING THE IMPLEMENTATION OF CONTEMPORARY DIDACTIC STRATEGIES

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Key words: instructive-educational process, didactic strategies, organisational methods, means and forms, motor attributes, motor skills and abilities, theoretical knowledge.

Abstract

This work presents a study regarding the motor and cognitive training level of high school students (9^{th} class) and the elaboration of a syllabus regarding the implementation of contemporary didactic strategies meant to render efficient the physical education classes.

The growth and development of children's and teenagers' bodies is now a major desideratum and the fundamental and applied research pinpoints varied didactic strategies for the matters grafted on the biological foundation of the growth and development process, as: the psychology, the physical education, the pedagogy.

Introduction

The contemporary didactic strategies for the physical education subject are not largely spread and did not found an adequate theoretical argumentation and, at the same time, they are correlated with the tendencies in the development of the formative education concept. Taking into account the high level of research in the field of contemporary didactic strategies, a series of their aspects have not been sufficient studied:

- a net correlation between didactic strategies, didactic technologies and education methods was not established;
- the role and place of didactic strategies in the disciplinary curriculum has not be determined;
- the problem of the correlation between educational objectives and didactic strategies was not solved;
- the principles for the selection of methods within the contemporary didactic strategies of the instructive-educational process for the physical education subject have not been established;

Thus, the specific didactics and the practice of the instructive-educational process for the physical education envisage the following situations: on the one hand, the many-sided development of didactic strategies and, on the other hand, the insufficient research to solve the problem of didactic strategies within the instructive-educational process.

This contradiction implies and generates the following problem: what is the methodological basis and the pedagogical conditions for the elaboration and implementation of contemporary didactic strategies

meant to render efficient the high school physical education classes. In order to solve this problem, we propose the establishment of a methodological basis for the implementation of contemporary didactic strategies intended to optimise the high school physical edcation classes.

With a view to render efficient the physical education lesson using contemporary didactic strategies, a previous experiment regarding the students' motor and theoretical training was set up.

In order to demonstrate the training level of high school students, the training level of students of this age was emphasised. The results and notes obtained by students in different control tests provided by the national evaluation and assessment system reflects the efficiency of organisational methods, means and forms for the physical education class.

699 students of Galati and neighbouring counties (Braila, Vrancea, Bacau) have participated in testing, out of which 412 girls, representing 59%, and 287 boys, representing 41%. The marks for each sporting test obtained by the studied sample for girls and boys are presented in the table 1. At the same time, the table presents the values needing to be reached in accordance with the evaluation and assessment system for the mark 10.

Table 1 Centralisation of data regarding the studied sample regarding the initial stage of motor training and the level of specific sport motor skills and abilities assimilated by the high school students

Trial	Boys (n = 287)		Girls (n = 412)	
	Pattern	Sample $\overline{x} \pm m$	Pattern	Sample $\overline{x} \pm m$
Flotations with legs supported on a bench (number of repetitions)	11	7.61±0.167	-	-
Flotations with hands supported on a bench (number of repetitions)	-	-	10	6.95±0.668
Simultaneous rising of trunk and legs (number of repetitions)	8	5.01±1.02	-	-
Rising of knees to chest from a hanging position (number of repetitions)	-	-	9	5.03±1,18
Three successive long jump from behind the foul line (cm)	7	5.63±0.59	-	-
Jumps over the gymnastics bench (no. of repetitions)	-	-	13	9.03±3,56
Commute run 5x10 m (seconds)	19.2	20.22±0.314	21	22.09±0.340
Speed race with low set start position, 50 m (seconds)	7.7	8.09±0.167	8.7	9.10±0.299
Resistance race, 800 m girls/1000 m boys (minutes)	4	4.20±0.163	4	4.40±0.087
Separated acrobatic elements	10	7.15±0.457	10	7.18±0.395
Jump using gymnastic apparatus	10	7.08±0.692	10	7.09±0.616
Isolated technical procedures	10	7.29±0.703	10	7.36±0.602

The results shows that the major part of tests carried out on the sample do not reach the promotion pattern and demonstrates the necessity for improvement of physical training level and the learning and consolidation of specific motor skills and abilities through the approach of methods, means and forms of organisation of physical education classes aiming higher performance results.

The general objective of the *physical education* subject consists of the development of motor skills, the assimilation of habits and abilities specific to certain sport branches and the formation of students' capacity of action in order to permanently maintain an optimum state of health, to ensure a harmonious physical development and a motor capacity favourable to the professional and social insertion. In order to accomplish these desiderata, the students needs *theoretical knowledge* on: the state of health and the hygiene of physical exercises, forms of outdoor physical exercises and sports, individually or in the family, specific terms related to physical education and sport, accepted and forbidden behaviour in different sport disciplines, institutions for the specific field, the Olympism, the Olympic Charter, the physical culture – as a domain of the universal culture, representative landmarks for the physical culture.

In order to analyse the theoretical knowledge of high school students, we conceived a 10-item test comprising the subjects indicated by curriculum for high school physical education, these items necessitating the enunciation and definition of notions and phenomenon of physical education and sports, with multiple options and one or more solutions. Each item has a score and the evaluation shall be based on the number of points obtained.

Summarising the results of test according to diagram 1, we have noticed that only 98 students from 699, representing the total number of questioned students number, i.e. 14%, have achieved a score corresponding to mark 10 and 24.7% achieved a score corresponding to mark 4, thus demonstrating that the theoretical knowledge does not represent a priority for the physical education class and the students assimilate and develop the motor skills, abilities and attributes but do not become conscious of their importance.

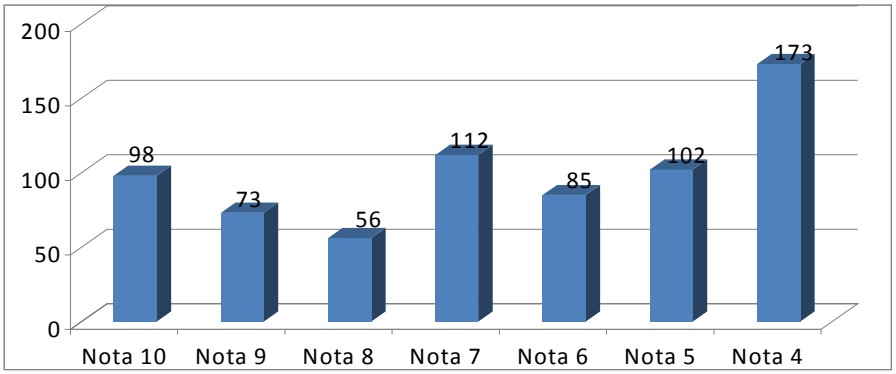

Fig. 1. Test of theoretical knowledge

The test of theoretical knowledge proves that the high school students do not have general or special knowledge in physical education and sports. This demonstrates that the development of specialty knowledge does not represent a priority for the Physical Education Teachers even at informative level.

Thus, we conceived an annual projection of learning units for 9th class by planning a certain order of learning units in the two semesters and taking into account the predictive evaluation of learning units scheduled for the beginning of the first semester for the selection of methods and means meant to be used during the teaching process concomitantly with the students' level of instruction at that stage and the summative evaluation. The description of the annual projection and the selected didactic strategies are presented in the Table 2.

Since the majority of 9th class students come from other learning units and have different levels of instruction, we have taken note of the differences between the students' levels of abilities and skills during different sports trials and branches and, in order to render the instruction process more efficient, we have selected for motor attributes and motor customs specific to certain sports branches those didactic strategies meant to render efficient the physical education class and the process of teaching and learning.

Table 2. Didactic model for the annual projection of learning units for 9th class

	Reference objectives	Sem.	No. of hours	Didactic strategies	Methodical methods and proceedings	Contents	Evaluation
MOTOR ATTRIBUTES	**Speed** The development of movement capacity with higher values of manifestation in all aspects: execution, walking, reaction; Speed development in force and ability regime.	I II	5 5	**Algoritmisation**	Maximal tempo procedure; Super maximal tempo procedure; Submaximal tempo procedure; Alternative tempo procedure.	Carrying out motor actions with maximum speeds after sound signals; Carrying out motor actions on the spot and during movement with an alternative tempo speed.	Predictive Systematic survey Summative
	Force Development of big-muscle groups under all forms of representation: general and specific. Development of muscle tonus and muscle groups involved in maintaining a proper body attitude.	I II	5 7	**Programmed instruction Problematisation**	Procedure „with weights"; Procedure in circuit; Power-Training Procedure; Isometric procedure; Procedure of strong and rapid muscle contractions; Procedure of repeated efforts.	Different jumps in sports games, athletics, gymnastics; Free exercises with objects meant to develop the muscles of abdomen, back and inferior and superior members; Circuit exercises.	Predictive Systematic survey Summative
	Ability Development of space orientation capacities, ambidextry, equilibrium and flexibility; Development of easy movement capacity under speed, force and resistance conditions.	I	6	**Algoritmisation**	Procedure of constant conditions; Procedure of complex conditions; Procedure of variable conditions.	Performing of specific exercises for the development of body and segments coordination in space and time..	Systematic survey
MOTOR ATTRIBUTES	**Resistance** Development of capacity for the coordination of the respiratory activity with the execution rhythm of various motor activities; Development of body's capacity to make aerobic and anaerobic efforts.	II	6	**Algortimisation**	Methodical procedures based on the variation of the volume of physical effort: uniform and repeated efforts; Methodical procedures based on the variation of the intensity of physical effort: variable and progressive efforts; Methodical procedure with intervals.	Running with tempo change; Long duration running. Performing of aerobic efforts with progressive duration and uniform and moderate tempo.	Systematic survey

ATHLETICS	**Speed running** Consolidation of elements in running school; Observance of regulations with specific procedures for speed running.	I	7	**Modelling**	Maximal, submaximal and alternative tempo procedures.	Accelerated speedstep; Launched speedstep; Start-down position and start launching; Arrival and attack of finish line.	Predictive Systematic survey Summative
	Resistance running Performing motor actions with various structure and efforts; Implementation of technical and tactic procedures assimilated in simple structures.	I II	5 5	**Differential treatment**	Methodical procedures based on the variation of the effort, intensity and volume of physical effort.	Launched step for middle-distance race; Run-in start and start launching.	Predictive Systematic survey Formative Summative
	Long jump with impetus Establishing the elements of jumping school; Observance of regulations with specific procedures for jump with impetus.	II		**Algorisation**	Explanation method; Demonstration method; Practice method; Methods for performing execution error correction;	Exercises for learning, consolidation and improvement of impetus, beating, detachment and landing.	Predictive Systematic survey Summative
GYMNASTICS	**Acrobatic gymnastics** Learning the basic elements of the following acrobatic elements: front somersault sit-up and both legs kicking out; hands standing; lateral wheel; bridge (girls); head standing (boys); back somersault with body folded and legs straight (girls); somersault with body straight and legs together (boys). Consolidation of acrobatic elements, separately or in structures, according to individual possibilities.	II	14	**Programmed instruction** **Problematisation**	Explanation method; Demonstration method; Practice method; Methods for performing execution error correction; Assurance and support methods.	Exercises for learning the technique of each procedure and the basic mechanism.	Predictive Systematic survey Summative
	Sustained jumps Consolidation of technical elements: sit-up jump over vaulting horse (girls) and sit-up jump over a box longitudinally disposed (boys).	I	10	**Algorisation**	Explanation method; Demonstration method; Practice method; Methods for performing execution error correction; Insurance and support methods.	Exercises for impetus improvement, jumped step and beating, first flight, putting hands on apparatus, the second flight and landing.	Predictive Systematic survey Summative

SPORTS GAMES	**Basketball (girls)/ Football (boys)** Improvement of technical and tactical elements and activities acquired through specific exercises; Implementation of learned technical procedures through simple technical activities; Correct performance of individual procedures; Combination between technical procedures and individual tactic actions during the bilateral game. Implementation of knowledge and technical and tactic customs in competitions and contests and observation of basic rules.	I II	19 21	**Differential treatment** **Problematisation**	Explanation method; Demonstration method; Practice method; Methods for performing execution error correction;	Exercises for learning the minimal technique with and without ball; Exercises for basic mechanism formation and implementation of analytical and dynamic stereotype of technical procedures; Exercises regarding the chaining of technical procedures, thus creating their possible consolidation under the form of a complex structure; Implementation of technical procedures and tactical actions through preparatory games with a reduced number of participants on adapted sport fields .	Predictive Systematic survey Formative Self-evaluation Summative
THEORETICAL NOTIONS	Awareness about the importance of physical exercises in order to ensure a harmonious physical development / to remove the disharmony specific to puberty and features of personality. During the physical education class, to explain and implement the knowledge regarding the technique for the execution of basic elements of motor abilities and skills specific to learned sport subject matters. To have general and specific knowledge necessary to play sports games according to arbitration rules.	I II	1'46 2'33	**Algoritmisation** **Problematisation**	Lecture Conversation Brainstorming Case study	Tables, reviews, homework. Methodological guides Textbooks	Current verifications, Assessment Knowledge test