

THE DYNAMICS OF CHILDREN'S CLASS COHESION AND INTERPERSONAL RELATIONS IN PHYSICAL EDUCATION LEARNING AT PRIMARY AND GYMNAZIAL CYCLING EDUCATION

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Abstract: *The present study, by resorting to specific means of physical school education, captures some particular aspects of the dynamics of interpersonal realities as well as the value of classroom pupils' cohesion, according to the age of the subjects.*

Applying the sociometric method, antefactum and postfactum of the moment of implementation of the independent variable, consisting of a group of categories of motor games and sports games, it is found that this has a greater impact on puberty than on childhood.

The results of the study determine the necessity that, in order to maintain a favourable social climate in the teaching and learning process, the didactic approach must be differentiated, both in its quantitative and qualitative aspects.

Keywords: *Physical education, motor games, sociometric method, interpersonal relationships, group cohesion*

1. Introduction

Romania is going through a historical period which rightly is wanted to be an anniversary moment, the Centenary of Great Union from 1918. Unfortunately, a simple introspection over our contemporary society, leads us to the conclusion that we live in a divided society, at all levels, lack of patterns (or not know to identify them), rant moral and civic values, while the relations of community members are permanently

conflicted (political, economic, social). In the current social environment, competition between individuals is regarded as an expression of adversity, cooperation is replaced by verbal and physical violence and social behaviour is focused on domination. The juvenile delinquency has reached alarming proportions, and "neighbourhood" behaviours have been partly transferred from the street in the school's perimeter. In this totally unfavourable context, it is the duty of the school (as an institution)

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and of each teacher, to seek and build educational solutions at the level of the studied subject taught, not only on the direction of the acquisition of classical information, but also, such as – even in our research - to improve the social climate in school, in general and at the level of each class of students, in particular.

From the perspective of physical education in Romania, in order to provide a viable educational offer and an integrative didactic approach, we consider that is necessary - according to the practical realities present – at the level of pre-university education, this study subject, to restructure and enrich not only the theory, but also the didactic methodology. This would reconcile the new national goals previewed be formative for young [14], [15], with the teaching strategies currently used internationally [5], [7-8] and would operationalize real potential values that physical education contains [12].

We are convinced that, by overcoming traditionalism that still remains inexplicable in the practice of school physical education, from our country, which is predominantly focused only on the improvement of motor performance, this discipline can fulfil its assumed role in the fulfilment of key competences, the general / specific competency package, to assimilate the values and attitudes required by the current specialized programs [14], [15]. In this context, our research proposes another way of teaching Physical Education, in sense that, it is focused on the motor component and also, on the other side of education and training, namely on social learning and cooperation [1], [4] less targeted in the current school practice in Romania and

having as an action paradigm, "The pupil taken as a whole".

2. Objectives

- Identification of physical education general competences, specific subjects, examples of learning activities and the content areas they provide, at the primary and secondary school curriculum, with reference to educational interventions belonging to the social learning area, respectively, the field of "Personality Components" [14] and "Behaviours and Attitudes" [15];

- The selective delimitation of the action area of didactic methodology, instruments that can bring significant formative effects on social learning direction, within the physical education lesson [9];

- Designing differentiated didactic strategies, on primary and secondary education level, which will lead us to the improvement of the pupil class cohesion coefficient [2-3];

- Emphasizing interpersonal relationships in the classroom, evaluating data sociometric research, to guide the teaching action accordingly;

- Research data collection, interpretation and drawing theoretical and methodological conclusions

3. Material and Methods

Experimental action - conducted during the school year - was carried out on two samples of different classes in different levels of education, that is primary and secondary schools. They were chosen to be part of the experimental groups, a fourth grade (A), with 26 pupils (14 boys and 12 girls, the average pupils' age of 10.3 years) and a class VIII (A) with 25 pupils (12 boys and 13 girls, the

average age of the class being 14.2 years old). For the control groups, a fourth class (B) was also selected, containing 25 pupils (13 boys and 12 girls, age 10.2 years), respectively a class VIII (B), with 27 enrolled pupils (14 boys and 13 girls, average age 14.2 years). The school has provided minimal equipment required to achieve general and specific competences provided by the specialized school curricula. In order not to influence the experimental variable, only one teacher from this school, was employed to carry out all pedagogical interventions in the field of research.

The experimental approach aimed to verify and evaluate the effectiveness of the teaching-learning-evaluation methodology, in the direction of acquires related to the social behaviour of pupils and the social climate of the target classes by implementing it in physical education lessons in a differentiated way depending on the level of the experimental classes on which it acted. The independent variable of the experiment consisted of teaching methodology applied, materialized by covering packages of different motor games, governed by a specific instructional strategy and on the other side, the teaching-learning-evaluating content within a game based on contemporary teaching methods, pupil-focussed: Teaching games for understanding [2], [8-9] and Teaching Personal and Social Responsibility [5], [13].

Through the means and methods used in the experiment, we have always taken into account the current inter-human relationships within the experimental groups. The dependent variable was the results of social learning, which were achieved by the independent variable, that is the methodology which we designed, assuming that it will produce significant changes objectified by increasing group

cohesion expressed by the index cohesion.

At the level of the control classes, for the same period (one school year), and with the same teacher (as we have previously maintained), the content of the school curriculum was taken in the physical education lessons, but only in the traditional teaching-learning-evaluation methodology, centred on improving students' motor ability.

Also, as a general strategy of our research, in order not to influence the independent variable of the experiment, we decided that the times allocated for the application of our methodology to the experimental classes should be approximately equal in terms of quantity, with the equivalent in time of applying the direct and technical training methods and methods used at the level of the control classes, which are considered as traditional for the Romanian specialized education.

Both, the experimental and the control groups, were subjected to the sociometric test in order to determine the structure of interpersonal relationships and the level of cohesion at an initial stage in September 2017 (initial testing - TI) and the final one, in June 2018, (final testing - TF).

4. Result and Discussions

The quantitative results of the allocation of content and the specific teaching while actually operating, with the games and equivalent means, reveal the following:

- in the 4th grade (A - experimental class), during the school year, 64 games were played (average / year), consuming a total effective time of 15h and 24min;

- in the 4th grade (B - control class), during the same time interval (2017/18 school year), intervened with a total of 67,5 activities, which required a total of 15h57min;

- in the 8th grade (A - experimental class) - 50 games with an actual working time of 13h and 25min, and in the 8th grade (B - control), were made - as a mean value - an average of 51,5 activities in 13h and 51min. In the case of the sports game that was chosen for all the studied classes (mini-handball/handball), the difference was given by the education methodology, which refers to the chosen sports game and not to the allocated time. Table 1 presents quantitative data common (similar) of the programming unit mini-handball learning game (IV-A Experimental and IV-B Control classes) and in the Table. 2, those of the VIII-A, experimental and VIII-B control classes.

Also, in this data case, we can say that the independent variable introduced in the experimental classes (A) is balanced quantitative perspective, with the action on the control class (B), all parameters being similar for the same level of class.

For dynamic data index / coefficient cohesion classes subject research was applied (initial and final) sociometric questionnaire. The results were processed with the help of sociometric technique and centralized by elaborating the sociometric matrices. Each subject/class was put in the matrix, with a code, in order to maintain the confidentiality rules of the information provided.

Table 1

The similar distribution of learning units, their positioning and the time allocated for mini-handball, to the IV-a classes

IV-a A – experimental class				IV-a B – control class	
Learning units	Number of allocated lessons*			Allocated time/ semester	
MINI-HANDBALL	As learning units		No. of allocated minutes/lesson		
	primary	secondary			
1 st SEMESTER	18	-	15min	270min	4 hours, 30min
2 nd SEMESTER	28	-	15min	420min	7 hours
Allocated time for the school year 2017/18				11 hours, 30min	

* Framework education plan - 2 hours of physical education/week

Table 2

The similar distribution of learning units, their positioning and the time allocated for handball, to the VIII forms

VIII-a A – experimental class				VIII-a B – control class	
Learning units	Number of allocated lessons *			Allocated time/ semester	
HANDBALL	As learning units		No. of allocated minutes/lesson		
	primary	secondary			
1 st SEMESTER	11	-	15min	165min	2 hours, 45min
2 nd SEMESTER	12	-	15min	180min	3 hours
Allocated time for the school year 2017/18				5 hours, 45min	

* Framework education plan - 1 hour of physical education/week

Based on these results, we performed - after initial testing (TI) – the calculation of

index cohesion (Cc), at the level of the four classes. At this stage, group cohesion

has the value of: experimental class IV-A - $C_c=0,1132$; experimental class VIII-A - $C_c=0,1379$; control class IV-B $C_c= 0,1172$; control class VIII-B - $C_c=0,194$.

By comparing these results with the tabular criterion data [11], we can say that at the initial testing, all the collectives are at the level of the groups with low cohesion, which is worrying, considering that all the groups are formed at least 3 years.

The value of the class cohesion index gives us numbers data about the social climate of the investigated group. This climate is determined by the interpersonal relationships between the component

members, relationships that result from their preferential distribution (preferential status).

Using the data from the sociometric matrix, made up after centralizing the results of the sociometric questionnaire, after the initial testing (TI), it was possible to calculate the preferential status index, determining the preferential psychosocial value of the subjects. We mention that, this operation was performed only for experimental classes IV-A - code subjects "e" (Table 3) and VIII-A - code subjects "E" (Table 4), where we will intervene with the independent research variable.

Values of preferential status index at initial testing - experimental class IV-A Table 3

Code subjects (e)	Values of preferential status index	Preferential psychosocial value
e14; e23	0,36	POPULAR
e13	0,28	ACCEPTED
e4; e19; e21	0,08	
e10; e11; e18	0,04	
e2; e3; e5; e22	0	INDIFFERENCE
e7; e8; e17	-0,04	MARGINALIZED (REJECTED)
e12; e20; e24	-0,08	
e6; e15; e16	-0,12	
e9; e25	-0,16	
e1; e26	-0,20	

Values of preferential status index at initial testing - experimental class VIII-A Table 4

Code subjects (E)	Values of preferential status index	Preferential psychosocial value
E24	0,416	POPULAR
E19	0,375	ACCEPTED
E9	0,166	
E3; E8; E16	0,125	
E11; E18; E21	0,041	INDIFFERENCE
E4; E7; E10; E17	0	
E5	-0,041	
E14	-0,083	
E2; E15	-0,125	
E1; E6; E13; E20; E22; E25	-0,166	MARGINALIZED (REJECTED)
E12; E23	-0,208	

The sociogram realised at the IV-A class reveals the fact that, there are

several leaders at the initial testing, the groups around them being given by the

type of subjects. So, girls have 2 leaders, and boys 1. Also, from table 3, it can be deduced that, as a result of initial testing, the group which constitutes class IV-A is divided as follows: two subjects have the status of popular, 7 are considered to be accepted by the group, 4 are indifferent and 17 are in the marginalization area, respectively rejected by the other members of the class. At the level of VIII-A class (code subjects E), there is also a tendency to group around two leaders, one female (E19) and one male (E24). This kind of centring to leaders by gender, seems to be specific to the age subjects. The data from table 4 shows: 2 subjects holding group status, 7 subjects are considered as accepted by the group, 4 are indifferent and 12 are in the marginalization or rejection area, of the other class members.

By preference values of the subject's psycho-social type, it was possible to observe and extract – at the initial time of the study – the way to make social networks at the level of experimental classes. Some of these networks, at different moments of didactic

intervention, selectively targeted the teachers' actions, these being done systematically through the operational tools, given by the methodology centred on the coupling of motor and social learning. These interventions were made especially by students with the status of marginalized and indifferent, in order to integrate them into collective class affiliation, engaging in this process, both leaders of the class and those who had tendencies to connect with subjects with status unfavourable.

After the implementation of the independent variable – throughout the school year – at the level of the experimental classes and the learning contents through traditional didactic methodologies in the control classes, at the time of final testing (TF), the sociometric questionnaire was applied again. The sociometric matrices were made, obtaining the following values of cohesion index: experimental class IV-A – $C_c=0,4534$; experimental class VIII-A – $C_c= 0,6260$; control class IV-B – $C_c=0,3452$; control class VIII-B – $C_c=0,4481$.

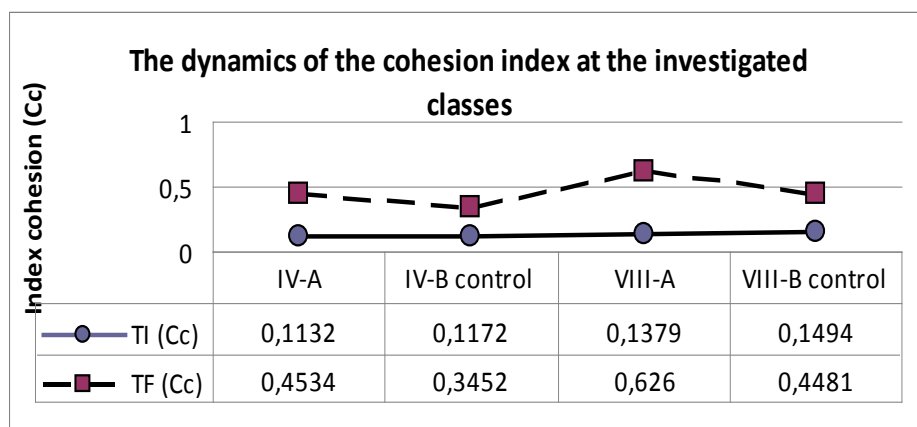


Fig. 1. *The dynamics of the cohesion index at the investigated classes*

The values of the coefficients obtained in their dynamics, are cumulatively represented in Figure 1.

According to the criterion values, in the final testing (TF), all the groups investigated show some progress (Figure 1). Thus, it is observed that in the experimental classes, IV-A falls by the calculated value (0,4534), to the group with moderate cohesion, while VIII-A falls in group with significant cohesion (0,626). In control classes, at the final tests, the situation is as follows: class IV-B has values that characterize a low cohesion group (0,3452), while class VIII-B reaches a level of moderate cohesion (0,4481).

Also, in the final stage of investigation (TF), the centralized results of the sociometric questionnaire, both at the values of the preferential status index, sociometric matrices and the collective sociograms of the elections and rejections (Figure 2; 3), show us that:

- At the level of IV-A class:

- only 6 subjects (1 indifferent, 5 rejected) remained in the indifference and marginalization area, compared to the 17 cases initially, and in the area of popularity two subjects entered, although in the initial investigation stage, none of them obtained the minimum required value of the preferential status index required for access to this area. This fact indicates that, the didactic methodology we have implemented in this class, has determined the tendency of the group members to focus on the central area of the network,

taken as a whole;

- as regards the gender of the leaders, only two leaders, one female and one male, managed to be relatively focused.

- At the level of VIII-A class:

- the number of indifferent (4) and marginalized (12) dropped from 16 to 5, and those who maintained marginalized status (5 students), their behaviour underwent substantial changes, a claim backed by the value of rejections, which dropped from the negative score of -0,208 to -0,125. This data shows us, the tendency for the entire group to focus on the central area of the network;

- no students remained in the indifferent zone and the remaining 20 students received "accepted", "popular" and "very popular" status;

- as for the group leader, if initially there were two different gender leaders, at the end of our approach, there was only one female leader (E3).

From the presented data, we can say that through the methodology we have designed and applied, it acted in an efficient way on the social networks initially revealed (TI) by the sociograms of the experimental classes and managed to progressively improve the interpersonal relationships to the groups that have been intervened with the independent variable.

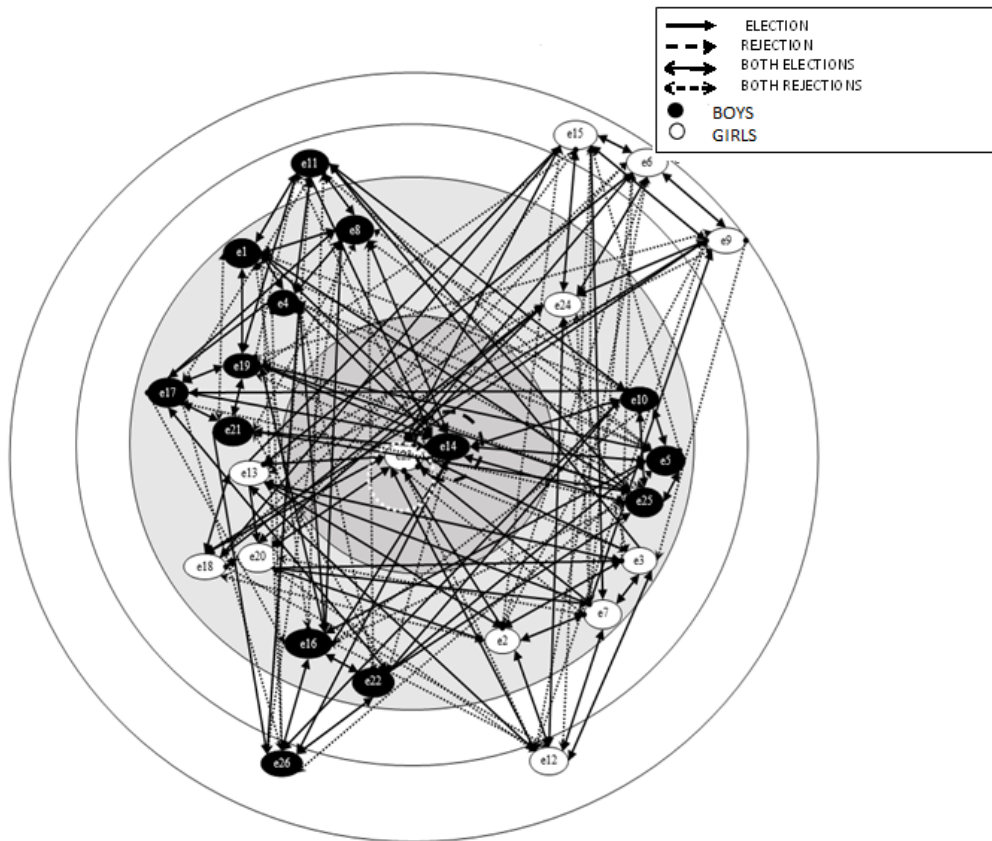


Fig. 2. Final sociogram in the experimental class: IV-A

This fact is demonstrated by improving the index cohesion of the research classes, to a significantly greater value, extent than in the case of the control classes, where the act of teaching was conducted traditionally. Although, a certain progress of the index cohesion has been observed in these classes, it is much less obvious than in the experimental classes.

4. Conclusions

The initial values of the index cohesion in the four classes included in our research show that, although the collectives of students are 3 years old, they have a low social homogeneity, which demonstrates the lack of orientation of the didactic act, at least contextually, to the physical education course, to this niche of behavioural development.

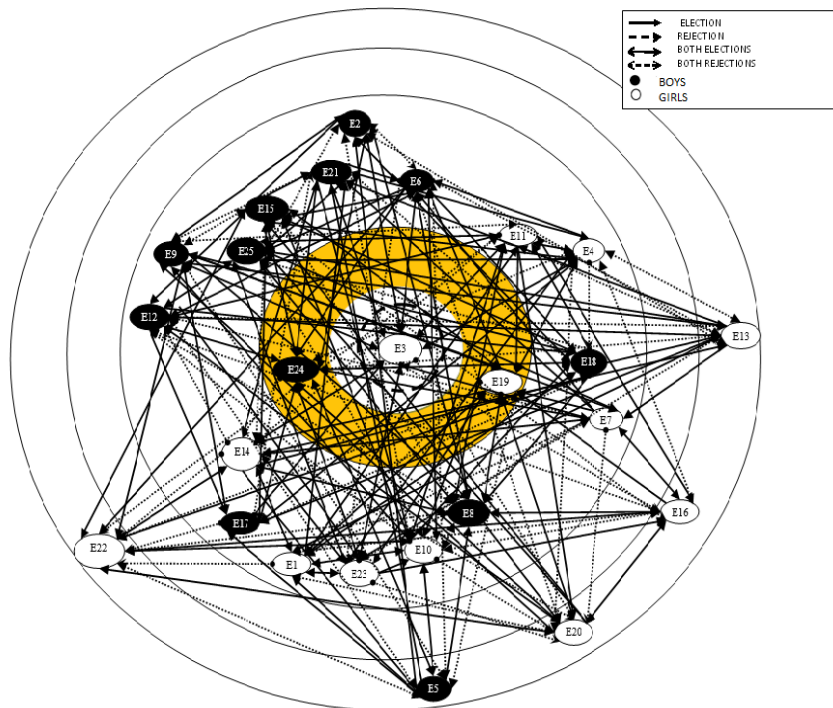


Fig. 3. *Final sociogram in the experimental class VIII-A*

The analyse of the dynamics index cohesion, at the level of the research classes, during a school year, leads us to the idea that, there is a general trend of improvement - more or less - the cohesion of the groups investigated. This fact can be put on both, the quality of teaching oriented towards the social learning direction (the case of the experimental classes), but also on the psychosocial maturity of students, during the course of their own school experiences (from the primary to the gymnasium). Maturing progressive bio-psycho-social student, it is undoubtedly certain stages in a significant limiting factor on the direction of development of social behaviour, actions on social learning having a much greater influence on puberty relative to childhood. However, we cannot fail to notice the fact that, at the level of the classes where the

interpersonal relations were directly influenced, the results reveal a significant difference in the group's cohesion values and accordingly, a classification to another level groups perspective of cohesiveness.

The research has demonstrated the real possibility of effective action in the direction on other fields of interest, offers by the physical education, and implicitly of their resonance on the personality of the student, rather than just those given by the motor performance, opening opportunities for full realization of the finalities of the specialized school programs.

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