❖ VARIA

THE INCREASE OF THE EFFICIENCY OF THE PHYSICAL EDUCATION CLASSES BY USING MEANS SPECIFIC TO CHEERLEADERS TEAMS AT V GRADES

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Abstract
Physical education and sports may be the only school subject where most children should willingly participate due to its content and the formative attitudes and effects that it has on a long term. For all these motivations and expectations of the children, the teacher should find optimum, diverse, creative, organizatory, material and methodical solutions. These will reflect upon the optional physical education classes and upon outside school activities, ensuring them a greater attractiveness. The means specific to cheerleaders teams offer the possibility of enriching their knowledge, skills and aptitudes, of improving the body biometric development indexes. Also, the attractiveness and density of physical education classes can increase by involving all the students, implicitly those who are spared of physical effort or who have minor complaints. The cheerleaders teams can accompany the teams to different competitions, thus acting also on the team work capacities development.
Key words: cheerleaders, physical education, optimization, specific means.

Introduction

In all civilized countries, education stays dependent to the Ancient ideal "Mens sana in corpore sano"(a healthy mind in a healthy body). The existence of physical education and sport classes in school is absolutely necessary in order to stimulate movement and even performance among children. Every child is entitled to an harmonious education which can offer him the access to some knowledge that will help him better know and understand the world we live in and to develop his autonomous potential and thinking but also it can offer a way to practice movement and sports.

The physical education curriculum for gymnasium has a certain structure and content adequate to the reforming curricular concept which, by applying it, should lead to the whole achievement of curricular standards of performance (E. Scarlat, B. Scarlat, 2006).

Starting with the school year 1977-1978, the Ministry of Education proposes that all competitions and school sports contests should take place within the national sports competition "Daciada", a very big contest at that time. During the school competitions within this sports event, some athletics teams contests with acrobatic elements and rhythmic gymnastics elements were foreseen, contests that had a certain theme depending on the sport event they were created.

The concept of cheerleaders teams is a relatively new one in our country and it appeared after the 1990s.

The cheerleaders' training should contain along with physical training, elements from basic gymnastics and for performance. Gymnastics represents a system of exercises applied analytically or globally, and which selectively influences the locomotor apparatus for the improvement and harmonization of the movements of the human body and for the formation of its proper bearing (M. Faur, 1996).

Performance gymnastics has the following branches: artistic gymnastics, rhythmic gymnastics, acrobatic gymnastics and aerobic gymnastics (M. Damian, 2002).

Rhythmic gymnastics, the only exclusively feminine discipline, contained in school curricula, has a great and various number of basic formative means and free specific technical means and with portable objects (I. Sima, 1980). Acquiring the technical means of rhythmic gymnastics should be preceded by the formation of the body's bearing and the aesthetic performance and by the improvement of the expressive movement components and also by the development of the motric capacities, emphasizing the coordination of the reaction speed and mobility. The aesthetic of the movement is expressed through attitude and the bearing of the body in accordance with the requirements of the art of dancing, thus expressing through plasticity and motric expressiveness attributes.

If rhythmic gymnastics addresses only to girl students, artistic gymnastics can be practiced both by girls and boys. Artistic gymnastics benefits from an assembly of various and attractive means with different degrees of difficulty, and its main goal is to improve the physical development and the motric capacity of the body.

M. Manos (2008) asserts that aerobic gymnastics is also called aerobic or cardio-respiratory fitness and it represents a sportive physical activity with multiple positive attitudes and its main reference element is the motric and psychic capacity of the individual, with benefic effects on the physical condition and on his health, on the background of resistance development
and adjustment to effort of the respiratory and circulatory apparatus.

The purpose of this research

This research work performed during the physical education and sport classes at V grade

anticipates the requirements of the nowadays society to develop the students, from their personalities point of view but also physically, metrically and intellectually, with an echo on their health and their future life. Therefore, an active, enthusiastic, competitional participation is expected through the implementation of diversified means taken from rhythmic, artistic, aerobic gymnastics, modern dancing, sportive dancing, classical dance, eurhythmy, etc. The adjusted means, organized in cheerleaders teams, will achieve an extra motivation to an active participation with benefic influences on the development of motricity, personality and human psychic.

The objectives of this work

*To develop an action model in order to a forthcoming intervention within the classes system

*To develop and apply some tests which would evaluate the physical and motric development level of the students

*To select and label the subjects of the research

*To collect, analyze and interpret the research data

*To draw conclusions and decent suggestions.

The hypothesis of this work

The implementation in the physical education class at V grade the means specific to cheerleaders teams which would lead to the increase of the efficiency of the class and implicitly to the increase of attractiveness and participation to class.

The development of the research

This research experiment took place at "Carmen Sylva" High school in Eforie Sud, in the

school gym, between October 13, 2008 and May 15, 2009 at grades V A and V B.

The materials, the school gym of "Carmen Sylva" in Eforie Sud offer great conditions of performing physical education and sports classes: 10 gymnastics mattresses, 2 elastic springboards, a vaulting horse, gymnastics box, 4 fixed ladders, rhythmic gymnastics hoops , sticks, skipping ropes, audio-video equipment; all these allowed the experiment to develop in optimum conditions.

The subjects of this experiment were 18 girl students, 9 from V B grade who represented the experiment group and 9 from V A grade who represented the control group, both groups with a mean age of 12 years old. I specify that the subjects of this research, during I-IV grades did not systematically practice physical exercises as their physical education classes were replaced, most of the time, with other school subjects, from different reasons.

During physical education and sport classes, for the experiment group, we used means specific to cheerleaders teams as follows: for 26 weeks, 2 hours per week from which 40 minutes were assigned to specific training. By summing up it resulted a number of 400 hours and 40 minutes –under the condition that a physical education and sport class lasts 50 minutes. During school holidays we did not work but on March 28, 2009 they were on a show where they presented a pompons programme inside the school gym of "Lazar Edeleanu" High school in Navodari.

For the control group we used classical means to develop the motric qualities and skills.

Results

The analysis and interpretation of the motric and physiological indexes.

Table nr. 1

Event		Speed running – 30 m (seconds)					
Group		Experiment Group		Witness Group		E.G.	W.G.
Test		I.T.	F.T.	I.T.	F.T.	F.T.	F.T.
n = 9	X	5,389	5,189	5,478	5,267	5,189	5,267
	DS	0,369	0,31	0,148	0,20	0,31	0,20
	Cv	6,85	5,97	2,70	3,80	5,97	3,80
	t	3,328		3,455		0,633	
	p	< 0,05		< 0,01		> 0,05	

On the **30m speed** event, as it can be seen in **Table nr.1**, the statistical calculus of the mean performances between the initial testing and final testing, at the two groups, shows a value of "t" for the experiment group of 3,328 (significant**; p<0,05**) and for the witness group a value of "t" of 3,455 (significant; **p<0,01**). After comparing the results obtained by the two groups in

final testing, we notice that the value of "t" is of 0,633, a fact that does not represent a significant difference (**p>0,05**).

The values of the variability coefficient, under 10%, indicate a high homogeneity at both the experiment and witness groups.

Table nr. 2

Event		Resistance running 2'40" (meters)					
Group		Experiment Group		Witness Group		E.G.	W.G.
Test		I.T.	F.T.	I.T.	F.T.	F.T.	F.T.
n = 9	X	395,556	475,556	381,111	463,333	475,556	463,333
	DS	37,454	50,277	28,038	51,962	50,277	51,962
	Cv	9,47	10,57	7,36	11,21	10,57	11,21
	t	7,589		6,727		0,507	
	p	< 0,001		< 0,001		> 0,05	

Within the **resistance running** event, the analysis of **Table nr. 2** shows a significant progress between initial testing and final testing at the experiment group and witness group (**p<0,001**).

As a consequence of the final tests and of the comparison of the two groups it is obtained a value of

"t" of 0,507, a fact that represents an insignificant difference in this event (**p>0,05**).

The values of the variability coefficient present us a great and mean homogenity of the results obtained by the subjects of the two groups.

Table nr. 3

Event		Long jump standing (cm)					
Group		Experiment Group		Witness Group		E.G.	W.G.
Test		I.T.	F.T.	I.T.	F.T.	F.T.	F.T.
n = 9	X	148,333	155	150	161,667	155	161,667
	DS	9,014	10,607	9,014	13,463	10,607	13,463
	Cv	6,08	6,84	6,01	8,33	6,84	8,33
	t	5,657		5,292		1,167	
	p	< 0,001		< 0,001		> 0,05	

In **long jump standing** event, as the **Table nr.3** shows, the statistical calculus of mean performances between initial testing (x=148,333cm) and final testing (x=155cm) at the experiment group, shows us a value of "t" of 5,657 (significant; **p<0,001**). The same significant value is seen at the witness group.

The comparison of the results obtained by the two groups in final testing gives us a value of "t" of 1,167, a statistically insignificant difference (**p>0,05**).

The values of the variability coefficient, of under 10%, points to us a high homogenity at both the experiment group and witness group.

Table nr. 4

Event		Push-ups 30" (repetitions)					
Group		Experiment Group		Witness Group		E.G.	W.G.
Test		I.T.	F.T.	I.T.	F.T.	F.T.	F.T.
n = 9	X	19,667	22	19,111	21,333	22	21,333
	DS	1,732	2,345	1,364	1,658	2,345	1,658
	Cv	8,81	10,66	7,14	7,77	10,66	7,77
	t	8,083		10		0,696	
	p	< 0,001		< 0,001		> 0,05	

During the **trunk lifting from dorsal laid down position** event, the subjects of the experiment group obtained, between the two test an average improvement of the number of implementations with 2,33 repetitions, starting from an average value of 19,667 repetitions in the initial testing and reaching to an average value of 22 repetitions in the final testing. The value of "t" was of 8,083, thus achieving progress

at a significant value of **p<0,001** in this event. Within the witness group a significant difference is also recorded between the initial and the final testing. In final tests for the two groups, the difference is statistically insignificant (**p>0,05**).

The values of the variability coefficient show us a great and mean homogeneity of the results obtained by the subjects of the two groups.

Table nr. 5

Event		Trunk extension 30" (repetitions)					
Group		Experiment Group		Witness Group		E.G.	W.G.
Test		I.T.	F.T.	I.T.	F.T.	F.T.	F.T.
n = 9	X	20,333	24,444	19,889	24,111	24,444	24,111
	DS	1,323	2,128	1,764	2,205	2,128	2,205
	Cv	6,51	8,70	8,87	9,14	8,70	9,14
	t	8,488		5,089		0,326	
	p	< 0,001		< 0,001		> 0,05	

In the **trunk extension** event, the subjects of the experiment group recorded a mean value of performances of 24,444 repetitions in final testing in comparison to 20,333 repetitions in initial testing and the value of "t" is of 8,488, fact that represents a statistically significant difference (**p<0,001**). At witness group a significant difference is also observed between the initial and final testing

As a consequence of the final testing and comparing the results of the two groups in this event, a value of "t" of 0,326 is obtained, a statistically insignificant difference (**p>0,05**). The values of the variability coefficient, of under 10%, point us a high homogeneity at experiment and witness group.

Comparative analysis of tests specific to motricity.

Table nr. 6

Event		Stretching the left leg at 180° in comparison to the right leg (cm)					
Group		Experiment Group		Witness Group		E.G.	W.G.
Test		I.T.	F.T.	I.T.	F.T.	F.T.	F.T.
n = 9	X	16,111	14	19,111	17,556	14	17,556
	DS	9,387	9,028	5,036	4,773	9,028	4,773
	Cv	58,26	64,48	26,35	27,19	64,48	27,19
	t	4,642		5,292		1,045	
	p	< 0,01		< 0,001		> 0,05	

During this event, a mean value of 14cm in final testing in comparison to 16,111cm in initial testing was noticed at the subjects of the experiment group, and the value of "t" was of 3,500 (significant; $p<0,01$). At the witness group the value of "t" calculated as a difference between initial and final testing was of 5,292 – significant difference; $p>0,001$

In the final tests of the two groups for this event a value of "t" of 1,045 is obtained, statistically insignificant difference ($p>0,05$).

By analyzing the values of the variability coefficient which has values over 20%, we can state that during this event we deal with a low homogeneity of the results obtained by the subjects of the two groups.

Table nr. 7

Event		Stretching the right leg at 180° in comparison to the left leg (cm)					
Group		Experiment Group		Witness Group		E.G.	W.G.
Test		I.T.	F.T.	I.T.	F.T.	F.T.	F.T.
n = 9	X	16,333	13,778	20,444	18,889	13,778	18,889
	DS	6,403	6,418	3,877	4,343	6,418	4,343
	Cv	39,20	46,58	18,96	22,99	46,58	22,99
	t	6,782		6,424		1,979	
	p	< 0,001		< 0,001		> 0,05	

During this event, as we notice in **Table nr.7**, the subjects of the experiment group achieved, between the two tests, some improvement of their performances with 2,55cm, starting from an average value of 16,333cm in initial testing and reaching to an average value of 13,778cm in final testing. The value of "t" was of 6,782 which represents a significant difference (**p<0,001**). Within the witness group, the progress

recorded between initial and final testing was also significant and the value of "t" was of 6,424 (**p<0,001**). By comparing the average results obtained in final testing by the two groups an insignificant difference is observed (**p>0,05**).

The values of the variability coefficient indicate a mean and low homogeneity of the results obtained by the subjects of the two groups.

Table nr. 8

Event		Mobility (cm)					
Group		Grupa experiment		Witness Group		E.G.	W.G.
Test		I.T.	F.T.	I.T.	F.T.	F.T.	F.T.
n = 9	X	4,778	3,111	6,556	5,667	3,111	5,667
	DS	2,863	2,421	5,659	4,743	2,421	4,743
	Cv	59,91	77,18	86,33	83,71	77,18	83,71
	t	2,582		1,512		1,440	
	p	< 0,05		> 0,05		> 0,05	

For the **mobility** event, the subjects of the experiment group recorded a mean value of 3,111cm in final testing in comparison to 4,778cm in initial testing, the real difference is of 1,667cm, thus registering a significant difference at the value of **p<0,05**. At witness group the value of "t" calculated as a mean difference, between the initial and final testing, was of 1,512 – a statistically insignificant difference (**p>0,05**).

At the final tests of the two groups in this event a value of "t" of 1,440 is obtained, a statistically insignificant difference (**p>0,05**).

The values of the variability coefficient indicate a low homogeneity of the results obtained by the subjects of the two groups in the mobility event.

Table nr. 9

Event		Coordination test (nr. of errors)					
Group		Experiment Group		Witness Group		E.G.	W.G.
Test		I.T.	F.T.	I.T.	F.T.	F.T.	F.T.
n = 9	X	3,222	2,333	3,444	3,333	2,333	3,333

DS	0,833	0,50	0,882	0,50	0,50	0,50
Cv	25,86	21,43	25,60	15	21,43	15
t	4,438		0,555		4,243	
p	< 0,01		> 0,05		< 0,001	

Within the **coordination** event, the analysis of **Table nr.9** presents some significant progress between the mean values of initial testing (3,222 errors) and final testing (2,333 errors) at the experiment group (t=4,438; **p<0,01**). At the witness group, the value of "t" is of 0,555, representing an insignificant difference **(p>0,05)**.

As a consequence of the final tests and of the comparison of the results of the two groups a value of "t" of 4,243 is achieved, a significant difference **(p<0,001)** which means that the programme developed and applied by us had a significant contribution to the training of the subjects in the experiment group

As for the variability coefficient, this indicates a low and mean homogenity of the results obtained by the subjects in this event.

Table nr. 10

Event		Bridge position (cm)					
Group		**Experiment Group**		**Witness Group**		**E.G.**	**W.G.**
Test		**I.T.**	**F.T.**	**I.T.**	**F.T.**	**F.T.**	**F.T.**
n = 9	**X**	61	54,444	56,111	53,944	54,444	53,944
	DS	20,273	16,667	28,405	28,702	16,667	28,702
	Cv	33,23	30,61	50,62	53,21	30,61	53,21
	t	**3,589**		**2,772**		**0,045**	
	p	**< 0,01**		**< 0,05**		**> 0,05**	

Within this event, the analysis of **Table nr.10** shows us some significant progress between initial and final testing at the experiment group (t=3,589; **p<0,01**) and witness group (t=2,772**; p<0,05**).

As a consequence of the final tests and of the comparison of the results of the two groups a value of "t" of 0,045 is achieved which represents an insignificant difference for this event **(p>0,05)**.

The values of the variability coefficient, of over 20%, indicate a low homogeneity of the results obtained by the subjects of the two groups.

Table nr. 11

Event		Flamingo – on the left leg (seconds)					
Group		Experiment Group		Witness Group		E.G.	W.G.
Test		I.T.	F.T.	I.T.	F.T.	F.T.	F.T.
n = 9	X	227,556	302,778	222,111	228,111	302,778	228,111
	DS	70,974	76,395	51,724	44,896	76,395	44,896
	Cv	31,19	25,23	23,29	19,68	25,23	19,68
	t	7,678		0,806		2,528	
	p	< 0,001		> 0,05		< 0,05	

Within the **Flamingo on the left leg** event, the analysis of **Table nr.11** shows some significant progress between the mean values of the initial testing (227,556sec.) and the final testing (302,778sec.) at the experiment group (t=7,678; **p<0,001**). At witness group the value of "t" is of 0,806 which represents an insignificant difference (**p>0,05**).

During the final tests of the two groups a value of "t" of 2,528 is achieved, a significant difference (**p<0,05**). This difference can be also attributed to the programme applied by us to the experiment group.

As for the variability coefficient, this indicates a low and mean homogenity of the results obtained by the subjects in this event.

Table nr. 14

Event		Flamingo – on the right leg (seconds)					
Group		Experiment Group		Witness Group		E.G.	W.G.
Test		I.T.	F.T.	I.T.	F.T.	F.T.	F.T.
n = 9	X	236,778	280,111	226,889	231,222	280,111	231,222
	DS	58,681	48,524	37,645	40,289	48,524	40,289
	Cv	24,78	17,32	16,59	17,42	17,32	17,42
	t	4,224		0,918		2,325	
	p	< 0,001		> 0,05		< 0,05	

In the **Flamingo on the right leg** event, the subjects of the experiment group recorded a mean value of 280,111sec. in final testing in comparison to 236,778sec. in initial testing, the real difference is of 43,333sec. (t=4,224), thus registering a significant difference of the value of **p<0,001**. At the witness group the value of "t" was of 0,918 – a statistically insignificant difference (**p>0,05**).

By comparing the results of the two groups in final testing, we notice that, within this event, the experiment group achieves better results than the witness group, as a consequence of our training programme efficiency (**p<0,05).**

The values of the variability coefficient, situated between 10% and 30%, indicate a mean and low homogenity of the subjects in this event.

Conclusions

The hypothesis was confirmed, thus, the operational models as cheerleaders programmes partially or entirely performed with or without portable objects led to a more efficient physical education lesson, to a higher degree of attractiveness, diversity and to a higher level of participation from the students' part.

*as for the **level of general physical training**, from the initial testing until the final one, progress was recorded at both groups, a fact that shows that the means used to improve the general physical capacity were efficient for both groups. At final testing the comparative analysis of both groups on the same parameters reveals a lack of statistical significance.

The homogeneity recorded at the subjects of both groups was mean and high, at these events..

*as for the **tests specific to motricity**, as a consequence of the obtained data, we noticed some significant progress of the indexes recorded at coordination and balance. Therefore, at the coordination test the number of errors lowered from 3,22 to 2,33 at the experiment group. This thing proves the fact that the combined means from rhythmic gymnastics, acrobatic gymnastics, aerobic gymnastics and dancing, applied to the experiment group in order to educate balance and coordination were efficient. The degree of homogeneity between the subjects during the specific events of motricity is a mean to low one

During tests performed to establish the level of development of the joint mobility and muscle elasticity there are no significant differences and these need extra time of training in order to register some significant progress.

Bibliography

DAMIAN, M., 2002, *Gimnastica de bază,* Ovidius University Press Publishing House, Constanţa.

FAUR, M., 1996, *Gimnastică şi Estetică,* Mitron Publishing House, Timişoara.

MANOS, M., 2008, *Gimnastica ritmică de performanţă,* Bren Publishing House, Bucureşti.

SCARLAT, E., SCARLAT, B., M., 2006, *Îndrumar de Educaţie Fizică Şcolară,* Didactic and Pedagogical Publishing House

SIMA, I., 1980, *Gimnastică ritmică- curs de bază,* Bucureşti.