

STUDY ON THE PREPARATION OF THE REPRESENTATIVE FOOTBALL TEAM IN PRIMARY EDUCATION USING THE GAG METHOD

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Abstract: The implementation of a structured physical, technical, and tactical training program, adapted to the age of primary school students, using the GAG method, which is more effective based on evaluation through both specific tests and games, will significantly improve the performance of the representative football team and contribute to the development of team spirit and motivation for sports. During the experiment 36 training sessions were conducted using the GAG method. 72 game forms were used in small and medium groups with numerical equalities and inequalities ranging from 2 to 5 players and 36 analytical exercises.

Introduction

The G.A.G. (Global – Analytical – Global) method is a contemporary teaching and learning technique in the field of physical education and sports, based on the concept of learning by doing. It involves alternating between game activities or exercises in a global manner and sessions of analysis and practice of technical and tactical aspects, which are then reintegrated into the general context of the game. The aim of the method is to learn through movement and play, developing fundamental motor skills and social skills in a fun and safe way. [1,9]

An innovative method rarely used by physical education and sports teachers was used in conducting the research, namely the GAG method. Given that football is the most popular team sport among children, it plays a crucial role in their physical, social, and emotional development. In primary education, motor skills develop rapidly, and an engaging, age-appropriate training environment can encourage active involvement and a desire to play sports. [2,6,8]

The GAG (Global–Analytical–Global) method is distinguished by its approach, which begins with real games and practical situations, continues with analytical exercises to improve technical elements, and ends with the reintroduction of the game, making it suitable for working with young students. Through this method, children experience an easier learning process, feel more inspired, and develop their technical and tactical skills and group cohesion in parallel. [3,4,5]

The selection of this research topic responds to the need to discover effective, enjoyable, and contemporary training techniques that correlate athletic performance

with character development, the promotion of discipline, and the cultivation of mutual respect. [7,10]

Material and method

The aim of the project is to optimize the training methodology of the representative football team in primary education by applying the GAG method, in order to improve technical skills, tactical ability, and team cohesion, in an enjoyable manner adapted to their age, with a view to participating in sports competitions and achieving results at the National School Sports Olympics.

Tasks:

1. Planning training sessions according to the GAG (global–analytical–global) approach.

2. Developing children's motor skills: strength, speed, endurance, coordination, and agility, by alternating exercises and games in the global and analytical parts.

3. Developing and strengthening fundamental technical skills: ball control, passing, receiving, shooting on goal.

4. Improving essential tactical elements: marking, positioning, cooperation in both attack and defense.

5. Generating exciting and adapted game situations to encourage active student participation.

6. Evaluating progress through recurring assessments of technical and tactical skills and team attitude.

7. Promoting sporting values: fair play, respect for opponents, and mutual support among teammates.

The research was based on information gathered from testing a total of 12 students, 12 of whom are part of the experimental group and are primary school students at the "Oltea Doamna" Technological High School in Dolhasca. There were also 12 students in the control group, who were also part of the same educational institution. Both the students in the experimental group and those in the control group were members of the school's representative football teams.

Both the students in the experimental group and those in the control group are of similar age, being in the third and fourth grades. Students from both groups who are medically fit and have similar anthropometric indicators were selected. The subjects in the control group come from the Juniorul Suceava Club.

Training sessions took place both during the school year and during the holidays. These training sessions were held mainly in the evening, while during the holidays, some training sessions were organized in the morning. The training program included Mondays, Wednesdays, and Fridays, and on some weekends, especially Saturdays, the children participated in matches with the school team, but also in the

Suceava County Football Championship at the clubs where they play as registered athletes.

During the experiment 36 training sessions were conducted using the GAG method.

Control samples used in the experiment:

1. Sprint – 25 m (top start) - unit of measurement - seconds
2. Sit-ups from supine position (30 seconds) - unit of measurement - number of repetitions
3. Standing long jump - unit of measurement - meters and centimeters
4. Technical course – dribbling the ball between cones over a distance of 10 meters there and back - unit of measurement - seconds
5. Keeping the ball in the air ("doubles") in a 2 × 2 meter square - unit of measurement - number of repetitions
6. Shooting at the goal from a distance of 20 meters, goal size 3 × 2 (accuracy – power) - unit of measurement - number of successes

Table nr.1. Comparative results obtained in the initial and final testing of the experimental group

Nr. Crt .	First and last name	Sprint – 25 m (top start)		Sit-ups from supine position (30 seconds)		Standing long jump		Keeping the ball in the air		Technical course		Shooting at the goal (accuracy – power)	
		T.I	T.F	TI	T.F	T.I	T.F	T.I	T.F	T.I	T.F	T.I	T.F
1	C.A	4,9	4,8	22	25	1,57	1,65	46	49	16.29	17.10	2	4
2	B.A	4,8	4,9	23	24	1,85	1,85	40	45	14.56	13.90	2	3
3	I.M	5.3	5.0	17	22	1.50	1.55	36	42	15.30	16.40	3	4
4	B.E	5.1	5.0	25	29	1,45	1,55	66	66	14	14,10	5	5
5	C.A	4.6	4.6	19	24	1,75	1,77	61	64	14.46	15.70	5	5
6	L.R	5	4.8	26	28	1.65	1.70	80	79	15	14,25	4	5
7	C.M	4.9	4.8	25	27	1.70	1.78	59	63	14.02	15.28	3	4
8	B.M	5.5	5.1	20	26	1.30	1.42	32	38	17.04	17.90	4	5
9	L.D	5.1	4.9	21	27	1,75	1,75	41	49	16.02	16.70	1	3
10	T.I	4.8	4.8	26	26	1.35	1.45	45	51	18.03	19.60	5	5
11	A.D	4.9	4.8	23	28	1.40	1.46	65	68	13.04	13.65	3	4
12	B.D	5.4	5	18	24	1.50	1.65	22	31	16.89	16.20	4	5

Table nr.2. Comparative results obtained in the initial and final testing of the control group

Table nr.3. Arithmetic mean of initial and final testing in the experimental and control groups

Nr. Crt.	First and last name	Sprint TEST 25 m (top start)		Sit-ups from supine position (30 seconds)		Standing long jump		Keeping the ball in the air		Technical course		Shooting at the goal (accuracy – power)	
		T.I	T.F	T.I	T.F	T.I	T.F	T.I	T.F	T.I	T.F	T.I	T.F
1.		Sprint – 25 m (top start)				5.57	3.27	5.22	4.92				
2.		Sit-ups from supine position (30 seconds)				14.37	8.46	15.85	11.91				
3.	S.A	5.1	5.1	23	24	1.50	1.52	20	22	17.30	17.10	3	3
4.	A.B	4.8	4.8	20	20	1.60	1.60	33	33	14.11	13.90	4.64	2
5.	R.M	5.5	5.4	19	22	1.52	1.57	28	28	16.40	16.40	17.59	3
6.	N.S	5.4	5.3	23	23	1.35	1.30	36	40	14.50	14.10	8.35	3
7.	L.L	5.1	5	20	19	1.42	1.45	40	42	15.58	15.70	15.82	3
6	S.L	4.9	4.9	28	28	1.60	1.60	52	55	14.88	14.25	2	2
7	M.I	5.4	5.2	25	26	1.62	1.60	44	46	14.01	15.28	5	5
8	P.A	5.2	5.1	19	21	1.30	1.35	28	29	18.20	17.90	3	3
9	C.D	5.0	5.0	22	24	1.64	1.62	38	39	17.20	16.70	3	2
10	G.R	4.9	4.9	23	23	1.40	1.42	36	33	19.50	19.60	3	3
11	B.N	5.6	5.4	26	25	1.40	1.40	48	44	14.00	13.65	4	2
12	H.C	5.1	4.9	19	21	1.60	1.55	32	34	17.25	16.20	5	5

Table nr.4. Standard deviation of initial and final testing in the experimental and control

Nr. Crt.	TEST	ARITHMETIC MEAN			
		EXPERIMENTAL GROUP		CONTROL GROUP	
		T.I	T.F	T.I	T.F
1.	Sprint – 25 m (top start)	5,03	4,89	5,17	5,08
2.	Sit-ups from supine position (30 seconds)	22,27	27,67	22,50	23,82
3.	Standing long jump	1,56	1,63	1,50	1,51
4.	Keeping the ball in the air	49,42	54,83	36,25	37,58
5.	Technical course	15,39	14,74	18,08	15,82
6.	Shooting at the goal (accuracy – power)	3,42	4,33	3,25	3,17

Table nr.5. Coefficient of variability of initial and final testing in the experimental and control groups

Nr. Crt.	TEST	STANDARD DEVIATION			
		EXPERIMENTAL GROUP		CONTROL GROUP	
		T.I	T.F	T.I	T.F
1.	Sprint – 25 m (top start)	0,28	0,16	0,27	0,25
2.	Sit-ups from supine position (30 seconds)	3,20	2,34	3,25	2,84
3.	Standing long jump	0,18	0,13	0,07	0,07
4.	Keeping the ball in the air	12,26	14,51	6,36	6,61
5.	Technical course	1,54	1,56	1,32	1,35
6.	Shooting at the goal (accuracy – power)	1,07	0,73	0,75	1,03

Discussions

Sprint – 25 m (top start)

The experimental group showed a greater improvement: -0.14 seconds compared to -0.09 seconds in the control group. The final result of the experimental group (4.89 seconds) is better than that of the control group (5.08 seconds). The method applied to the experimental group led to greater progress and a better final performance level. The control group made little progress, confirming that the experimental method is more effective for developing speed over 25 m. The standard deviation shows how uniform the results are (how close the values are to the mean).

In the experimental group, the standard deviation decreased significantly (from 0.28 to 0.16), which means that the students became more similar in terms of level, and the method led not only to better average performance but also to more uniform results. In the control group, the standard deviation decreased slightly (from 0.27 to 0.25), which shows that progress was not equal—some students made more progress than others. The experimental group not only achieved a better average, but also improved in terms of uniformity (the students' results are closer to each other). The control group remained less uniform, showing that the traditional method failed to equalize the participants' performance.

In terms of the coefficient of variation, there was a significant decrease in the experimental group (from 5.57% to 3.27%).

Sit-ups from supine position (30 seconds)

In the trunk lift test from the supine position, within 30 seconds, the experimental group recorded an increase from 22.27 to 27.67 repetitions (+5.40 repetitions, +24.25%).

The control group progressed from 20.50 to 23.83 repetitions (+3.33 repetitions, +16.27%). The intervention carried out for the experimental group led to a more significant improvement in average performance.

The standard deviation for the experimental group went from 3.20 to 2.34, while the control group went from 3.25 to 2.84. The reduction in standard deviation suggests greater uniformity in performance in the experimental group, suggesting that participants achieved greater proximity to the overall average.

Regarding the variation in the coefficient of variability, the experimental group went from 14.37% to 8.46%, while the control group decreased from 15.85% to 11.91%.

The reduction in the coefficient of variation confirms that the experimental group had lower variability in results after the intervention, indicating a more effective and uniform application of the training program.

The experimental group benefited significantly from the program, showing greater increases in performance and more consistent results. The reduction in standard deviation and coefficient of variation suggests that participants in the experimental group progressed more uniformly compared to those in the control group.

Standing long jump

Experimental group: 1.56 → 1.63 m (+7 cm, +4.49%)

Control group: 1.50 → 1.51 m (+1 cm, +0.67%)

The program implemented for the experimental group had a clear effect on increasing explosive leg strength.

The evolution of the standard deviation in the experimental group: 0.18 → 0.13, and in the control group: 0.07 → 0.07. The reduction in standard deviation in the experimental group suggests better uniformity of results, while in the control group, the variation remained unchanged.

The coefficient of variability in the experimental group: 11.54% → 7.98%, and in the control group: 4.67% → 4.64%. The G.A.G. method applied to the experimental group shows that progress was more consistent among participants, while in the control group, progress was almost imperceptible and stable.

The experimental group showed significant increases in both the mean and the uniformity of results. The reduction in standard deviation and coefficient of variation suggests that the program was effective in reducing differences between participants. Progress was almost negligible, indicating that natural advancement without intervention is extremely limited.

Keeping the ball in the air

Absolute and percentage increase in the experimental group, where there was a remarkable increase: 54.83 – initial test, to 49.42 final test, with a progress of 5.41.

In the control group, the following increase was observed between the initial and final tests: 37.58 – 36.25 = 1.33 double.

The experimental group had a significantly higher progress, indicating the effectiveness of the intervention applied.

The standard deviation increased (12.26 → 14.51), and the CV increased (24.80% → 26.47%).

This shows that, although the average increased, the differences between participants increased – some progressed a lot, others less.

In the control group, the standard deviation was almost constant (6.36 → 6.61), and the CV was almost unchanged (17.54% → 17.59%). The evolution was modest and uniform, with no major differences between participants. The technical test of keeping the ball in the air requires coordination, fine motor control, and rhythm. The significant increase in the experimental group shows that the program applied was effective in developing these skills.

The increase in standard deviation and CV in the experimental group indicates that some participants progressed more quickly, probably due to individual differences in coordination and technical control abilities. Compared to the control group, the almost imperceptible progress of the control group suggests that without structured intervention, progress in this technical test is limited.

The intervention is effective in increasing average performance, but the results show that some individuals may benefit more than others, which may require

individual adjustments or complementary exercises to standardize progress. The program applied to the experimental group was effective in increasing technical skills in keeping the ball in the air. The increase in dispersion (standard deviation and CV) indicates individual differences in the rate of progress, suggesting the need for more individualized monitoring and adaptation. The control group progressed very little and uniformly, confirming that spontaneous progress without intervention is limited.

Technical course

Both groups made progress, reducing the time taken to complete the technical course.

The control group had a greater improvement in absolute values (-2.26 sec.) compared to the experimental group (-0.65 sec.). However, the experimental group had better times both initially and finally (14.74 sec. vs. 15.82 sec.), demonstrating a higher level of overall performance.

The experimental group starts from a better level and remains superior, even if their progress is smaller. The control group, although it had more consistent progress, fails to reach the final level of the experimental group. The experimental program maintained performance at a higher level, but the control group had more obvious progress due to the larger initial gap. In the experimental group, the standard deviation remains almost constant (1.54 → 1.56), which shows that the variation in student performance has not changed significantly. Progress is slow but steady.

The standard deviation also remains stable (1.32 → 1.35). This means that the greater progress in absolute terms (-2.26 sec.) was achieved relatively uniformly by all students. CV values < 15% confirm the uniformity of the groups.

The experimental group has a slightly higher CV → the differences between students are slightly more pronounced than in the control group. The experimental group has a consistently higher level (faster both initially and finally).

The control group made greater progress in absolute terms (-2.26 sec. compared to -0.65 sec.), but failed to reach the final performance levels of the experimental group. Both groups are homogeneous, which shows that the training methods applied did not generate significant differences between students.

It can be said that the experimental method ensures a high and consistent level of performance, while the classical method produces visible progress, but not enough to surpass the experimental group.

Shooting at the goal (accuracy – power)

Clear increase from 3.42 → 4.33, i.e. an improvement of approximately 26.6%.

This demonstrates that the method applied had a clear positive effect on the accuracy and efficiency of shooting at goal. The evolution of the control group shows a decrease from 3.25 → 3.17, a regression of -2.4%. It can be seen that the traditional method not only failed to stimulate progress but also led to a slight deterioration in performance.

Initially, the difference was small: experiment (3.42) vs. control (3.25). Ultimately, the difference becomes significant: experiment (4.33) vs. control (3.17).

Therefore, the experimental method led to a real and clear increase in performance, while the control group stagnated/regressed.

Experimental group → clear progress and increased shooting efficiency.

Control group → slight regression, maintaining a low level.

The final difference confirms that the experimental method is clearly superior to the traditional method for developing shooting accuracy.

The standard deviation decreases from 1.07 → 0.73 and the final results are more homogeneous (the differences between students have decreased). This shows that the experimental method not only increased the average performance, but also standardized the level of the group.

In the control group, the standard deviation increased from 0.75 to 1.03. The progress of the control group was accompanied by an increase in differences between students. Some progressed more, others less, and the traditional method led to less balanced results.

The difference is reversed → the experimental method succeeded in creating a more balanced and uniform group at the end.

Experimental group: better performance + closer results between students → effective and balanced method. Control group: greater numerical progress, but with increased variability → the classic method generated uneven results. Ultimately, the experimental method offers a double advantage: better level + greater homogeneity.

Conclusions

The application of the experimental method had a positive impact on the physical and technical performance of the students in the experimental group, demonstrating its superiority over the traditional methods used in the control group. The results confirm that incorporating experimental methods into primary school children's training can be an effective tool for optimizing athletic performance. This can be extended to other groups of students, with adjustments specific to their age and level of physical development. In the experimental group, the differences between the initial and final tests were more pronounced, indicating rapid adaptation to the training program and consolidation of soccer-specific motor skills. In the control group, although slight improvements were recorded, they were less significant, suggesting that the traditional methods applied did not stimulate the development of motor and technical skills to the same extent.

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