

Study of the impact of chess practice on the development of psychosocial behavior of fifth grade school children (11-12 years)

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Abstract

Background. The conclusions of studies and researches conducted over time have highlighted the beneficial effects that chess brings in the development of psycho-social behavior of practitioners.

Aims. The aim of the study was to assess the effects of chess practice on the development of psychosocial behavior in fifth graders (11-12 years). The experiment group studied for 34 weeks the optional subject “Education through chess”, and the control group studied another optional subject.

Methods. The sample on which the experimental research was carried out consisted of a number of 47 fifth grade students from four educational units in Gorj County. As an assessment tool we used the student behavior observation sheet. Students’ competences were assessed on three levels: attitudes and behaviors; school discipline; psychosocial behavior. The quantitative analysis of the obtained results was carried out in the SPSS version 23 program.

Results. The results of our research highlight the fact that, at the end of the experiment, there were significant differences between the scores obtained by the subjects of the two groups, the study group acquiring these skills in a very large proportion and displaying them regularly.

Conclusions. Students of the fifth grade, who studied the discipline “Education through chess”, made significant progress in the development of psychosocial behavior.

Keywords: education, optional discipline, chess, development of psycho-social behavior.

Introduction

“Chess is a game, conceived in the form of a sports fight, between two opponents facing each other with the power of their minds” (Ghindă, 1994). Chess enhances your ability to socialize, measures your sportsmanship in a competitive environment, it is a test of concentration, patience, willpower and nerves.

The practice of chess is a gymnastics of the intellect that has the ability to stimulate and maintain the mental capacities of anyone, of any age, profession and social condition” (Dumitrescu, 2012). Vlad Ardeleanu (2008) said; “Chess helped me organize my mind, formed strategic thinking. Chess, in fact, is based on two essential things: strategy and tact. Tactics are rules of the game, which everyone should know, and strategy is that superior element that makes the difference” (Gheorghiu, 2008).

In a chess game you have the opportunity to evaluate yourself, self-knowledge and self-masters, which at the end of the game leads to a great educational gain, namely the power of self-education.

In order to highlight the benefits that children have from practicing chess, a series of educational and psychological studies have been conducted that have shown that mind play helps improve intelligence (Christiaen, 1975; De Groot, 1994; Liptrap, 1998; Scholz et al., 2008; Shahar & Avital, 2020) reading, memory and language skills (Sala & Gobet, 2017; Tanajyan & Tanajyan, 2023), solve problems in various subjects at school (Sala et al., 2015; Trincherro & Sala, 2016), as well as self-knowledge and self-control (Güneş & Tuğrul, 2017).

“The curriculum of the optional discipline Education through Chess has the role of facilitating the transition from approaching chess as a game, to approaching it as a science, with the help of its own methodology, based on observation, information gathering, exercise, problematization, prediction, planning. By going through the stages of learning chess, children acquire and enhance skills useful for life and integration into school life” (1).

There have been many studies and research work conducted over time describing the characteristics and

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psychosocial behavior of children aged 12 years (Feraco et al., 2023), intergroup identity and attitude (Ackerman & Elenbaas, 2023), self-perception and awareness (da Rocha et al., 2023).

At the age of 12, children begin to be preoccupied with themselves, they become more closed and less communicative, the spirit of contestation and the desire to rebel are acute, they embrace social causes (Horascu, 2020). At this stage, puberty comes into contact with “varied and profound knowledge, and thinking developing to the capacity of the real, parental inadequacies no longer go unnoticed” (Dragu & Cristea, 2002). This age stage “is characterized by the transition towards maturation and integration into adult society, with its social, political, family, professional demands etc.” (Șchiopu & Verza, 1997).

The person begins to appreciate values such as fairness, tolerance, understanding and respect, during a conflict, s/he advocates justice, begins to be aware of her/his rights and responsibilities, and explores ways in which s/he can contribute to the community (Horascu, 2020).

“The psychic effects of this aspect, of changing the lives of pubescent people, lead to the acquisition of more ways of learning, to the development of preferences and mobilization of skills, to the feeding of more diversified motivations for learning and to a closer self-evaluation and probing of one’s own competitive forces, of trying self-knowledge” (Șchiopu & Verza, 1997).

It was assumed that by practicing chess over the course of 34 weeks, 12-year-olds would acquire these skills and exhibit them regularly.

Hypothesis

By studying the optional subject “Education through chess”, during 34 school weeks, we can achieve visible effects in the development of psycho-social behavior of students.

Material and methods

Please note that there is the agreement of the Ethics Commission for conducting research and parental agreements regarding the participation of students in experimental research. The subjects also expressed their agreement to participate in this research

In this research we have used the observation method. We emphasized direct observation, but we also took into account scientific observation, theoretically grounded, analytical and systematized, conducted according to rules, repeated and verified. We used this method in order to study the behavior of the group of subjects during physical education and sports classes. The observation was carried out by the physical education and sports teacher who teaches in the class where the experimental research was carried out. This was done in a natural setting, the teacher entering the observed environment.

The observation was carried out in two stages: at the beginning of the school year (in the first module – Module 1) and at the end of the school year (in the last module – Module 5) (2). For each stage of observation, the physical education and sports teacher filled in an observation sheet

of students’ behavior, where the following competences were assessed, as presented in Table I and Table II.

Research protocol

a) Period and place of the research

The experimental research was conducted during the 2022-2023 school year, from September 2022 to June 2023. The behavior observation sheet was applied in two stages, at the beginning of the school year in module 1 – initial testing (Ti) and at the end of the school year in module 5 – final test (Tf).

The 2022-2023 school year had 36 weeks, started on September 05, 2022 and ended on August 31, 2023, being structured in five modules, as follows:

Module 1 - courses - from Monday, September 5, 2022, to Friday, October 21, 2022;

- Holiday - from Saturday, October 22, 2022, to Sunday, October 30, 2022;

Module 2 - courses - from Monday, October 31, 2022, to Thursday, December 22, 2022;

- Holiday - from Friday, December 23, 2022, to Sunday, January 8, 2023;

Module 3 - courses - from Monday, January 9, 2023, to Friday, February 3, 2023; at the decision of the Gorj County School Inspectorate;

- Holiday - from Saturday, February 11, 2023, to Sunday, February 19, 2023, at the decision of the Gorj County School Inspectorate;

Module 4 - courses - from Monday, February 20, 2023, at the decision of the Gorj County School Inspectorate, until Thursday, April 6, 2023;

- Holiday - from Friday, April 7, 2023, to Tuesday, April 18, 2023;

Module 5 - courses - from Wednesday, April 19, 2023, to Friday, June 16, 2023;

- Holiday - from Saturday, June 17, 2023, to Sunday, September 3, 2023.

In accordance with ORDER No. 3.505 of March 31, 2022 on the structure of the school year 2022-2023 (2).

b) Subjects and groups

The experimental research was conducted on a sample of 47 fifth grade students aged between 11 and 12 years from four schools in Gorj County. The experiment group consisted of 15 students (6 girls and 9 boys) and the control group consisted of 32 students (16 girls and 16 boys). Students in the experiment group studied the optional subject “Education through chess” during 34 school weeks.

c) Applied tests

The student behavior observation sheet was applied by the class teacher in order to monitor student behavior and their evolution over a period of time. The student behavior observation sheet was applied in two distinct periods of the school year.

This fiche assesses the following competences (Table I): *attitudes and behaviors* during physical education and sports classes, *school discipline* and *psychosocial behavior*.

The behavioral observation sheet is structured in two parts: Attitudes and behaviors and school discipline. This first part contains 10 items to which the teacher must respond with one of the indications: “Always”, “Sometimes”, “Never”.

Table I
Measured variables.

Evaluation sheet	Observable aspects/ Competences/Items
Attitudes and behaviors	Present themselves in appropriate sports equipment at physical education and sports classes
	Immediately learn the rules, explanations, examples, after they have been taught
	Demonstrate curiosity, ask questions to understand work tasks
	Actively participates in all lesson topics
	Manifests discipline in work, during physical education classes
School discipline	Has a civilized vocabulary in communicating with colleagues
	Performs the given tasks, responsibilities
	Shows respect when relating to others
	Generates conflicts between colleagues
	Distracts colleagues in classes
Psychosocial behavior	Communicativeness
	Sincerity/honesty
	Receptivity
	Mental balance
	Sociability
	Compliance with the rules

The second stage assesses the *psychosocial behavior* of students. This stage contains 6 items to which the teacher

answers with “Yes” or “No”.

Students of the class will carry out their work in the usual and normal way, without being informed that they are being monitored and graded. Also, the physical education and sports teacher of the class will carry out his/her usually planned teaching-learning-assessment activity. Depending on the observed behavior, the teacher will record in the handout - type of behavioral observation of students.

The monitoring period of the subjects differed from case to case, depending on the purpose of monitoring and the content of the sheet.

After completing the worksheet, the students’ behavior and improvement of these behaviors were observed.

d) Statistical processing

The quantitative analysis of the obtained results was carried out in the SPSS version 23 program. For the purpose of analysis, in dynamics, from initial testing to final testing, for each evaluated item and interpretation of the experimental research we used the following statistical indicators: frequency analysis and Chi-squared test.

Results

The table below presents the results of the initial and final assessments for the experimental group (E group) (Table II and Table III) and for the control group (C group) (Table IV and V) respectively.

Table II
Student behavior observation sheet scores (E group).

No.	Evaluation sheet Items	Observable aspects/ Competences/Items	Always		Occasionally		Never		Total	
			In.	Fin.	In.	Fin.	In.	Fin.	In.	Fin.
1.	Attitudes and behaviors	Present themselves in appropriate sports equipment at physical education and sports classes	3	15	9	–	3	–	15	15
		Immediately learn the rules, explanations, examples, after they have been taught	–	14	6	1	9	–	15	15
		Demonstrate curiosity, ask questions to understand work tasks	2	15	4	–	9	–	15	15
		Actively participates in all lesson topics	1	15	5	–	9	–	15	15
		Manifests discipline in work, during physical education classes	–	15	7	–	8	–	15	15
2.	School discipline	He has a civilized vocabulary in communicating with colleagues	1	15	11	–	3	–	15	15
		Performs the given tasks, responsibilities	2	15	12	–	1	–	15	15
		Shows respect when relating to others	2	15	11	–	2	–	15	15
		Generates conflicts between colleagues	3	–	12	–	–	–	15	15
		Distracts colleagues in classes	2	–	11	1	2	14	15	15

Table III

Student behavior observation sheet scores (E group).

No.	Evaluation sheet Items	Observable aspects/ Competences/Items	Yes		No		Total	
			In.	Fin.	In.	Fin.	In.	Fin.
3.	Psychosocial behavior	Communicativeness	5	15	10	–	15	15
		Sincerity/honesty	7	15	8	–	15	15
		Receptivity	2	15	13	–	15	15
		Mental balance	8	15	7	–	15	15
		Sociability	–	15	15	–	15	15
		Compliance with the rules	2	15	13	–	15	15

Table IV

Student behavior observation sheet scores (C group).

No.	Evaluation sheet Items	Observable aspects/ Competences/Items	Always		Occasionally		Never		Total	
			In.	Fin.	In.	Fin.	In.	Fin.	In.	Fin.
1.	Attitudes and behaviors	Presents themselves in appropriate sports equipment at physical education and sports classes	–	20	9	12	23	–	32	32
		Immediately learn the rules, explanations, examples, after they have been taught	2	16	8	16	22	–	32	32
		Demonstrate curiosity, ask questions to understand work tasks	4	16	6	16	22	–	32	32
		Actively participates in all lesson topics	–	16	11	16	21	–	32	32
		Manifests discipline in work, during physical education classes	1	19	8	13	23	–	32	32
2.	School discipline	He has a civilized vocabulary in communicating with colleagues	2	20	9	12	21	–	32	32
		Performs the given tasks, responsibilities	2	18	10	14	20	–	32	32
		Show respect when relating to others	3	21	9	11	20	–	32	32
		Generates conflicts between colleagues	9	–	15	10	8	22	32	32
		Distracts colleagues in classes	9	1	16	10	7	21	32	32

Table V

Student behavior observation sheet scores (C group).

No.	Evaluation sheet Items	Observable aspects/ Competences/Items	Yes		No		Total	
			In.	Fin.	In.	Fin.	In.	Fin.
3.	Psychosocial behavior	Communicativeness	10	22	22	10	32	32
		Sincerity/honesty	8	22	24	10	32	32
		Receptivity	9	22	23	10	32	32
		Mental balance	12	22	20	10	32	32
		Sociability	2	22	30	10	32	32
		Compliance with the rules	9	22	23	10	32	32

Table VI
Chi-Square Test (initial assessment).

Observable aspects/ Competences/items	Chi-Square Test (initial assessment)			
	Indicator/ parameter	Value	df	Asymptotic Significance Sig. (2-tailed)
Present themselves in appropriate sports equipment at physical education and sports classes	Pearson Chi-Square	14.077 ^a	2	.001
	Likelihood Ratio	15.315	2	.000
a. 2 cells (33.3%) have expected count less than 5. The minimum expected count is .96.				
Immediately learn the rules, explanations, examples, after they have been taught	Pearson Chi-Square	1.827 ^a	2	.401
	Likelihood Ratio	2.393	2	.302
a. 3 cells (50.0%) have expected count less than 5. The minimum expected count is .64.				
Demonstrate curiosity, ask questions to understand work tasks	Pearson Chi-Square	.425 ^a	2	.809
	Likelihood Ratio	.416	2	.812
a. 3 cells (50.0%) have expected count less than 5. The minimum expected count is 1.91.				
Actively participates in all lesson topics	Pearson Chi-Square	2.187 ^a	2	.335
	Likelihood Ratio	2.339	2	.311
a. 2 cells (33.3%) have expected count less than 5. The minimum expected count is .32.				
Manifests discipline in work, during physical education classes	Pearson Chi-Square	2.503 ^a	2	.286
	Likelihood Ratio	2.734	2	.255
a. 3 cells (50.0%) have expected count less than 5. The minimum expected count is .32.				
He has a civilized vocabulary in communicating with colleagues	Pearson Chi-Square	9.071 ^a	2	.011
	Likelihood Ratio	9,436	2	.009
a. 2 cells (33.3%) have expected count less than 5. The minimum expected count is .96.				
Performs the given tasks, responsibilities	Pearson Chi-Square	12.913 ^a	2	.002
	Likelihood Ratio	14.963	2	.001
a. 2 cells (33.3%) have expected count less than 5. The minimum expected count is 1.28.				
Show respect when relating to others	Pearson Chi-Square	10.330 ^a	2	.006
	Likelihood Ratio	11.206	2	.004
a. 2 cells (33.3%) have expected count less than 5. The minimum expected count is 1.60.				
Generates conflicts between colleagues	Pearson Chi-Square	5.965 ^a	2	.051
	Likelihood Ratio	8.273	2	.016
a. 2 cells (33.3%) have expected count less than 5. The minimum expected count is 2.55.				
Distracts colleagues in classes.	Pearson Chi-Square	2.312 ^a	2	.315
	Likelihood Ratio	2.401	2	.301
a. 2 cells (33.3%) have expected count less than 5. The minimum expected count is 2.87.				
Communicativeness	Pearson Chi-Square	47.000 ^a	3	.000
	Likelihood Ratio	58.865	3	.000
a. 4 cells (50.0%) have expected count less than 5. The minimum expected count is 1.60.				
Sincerity/honesty	Pearson Chi-Square	47.000 ^a	3	.000
	Likelihood Ratio	58.865	3	.000
a. 4 cells (50.0%) have expected count less than 5. The minimum expected count is 2.23.				
Receptivity	Pearson Chi-Square	47.000 ^a	3	.000
	Likelihood Ratio	58.865	3	.000
a. 4 cells (50.0%) have expected count less than 5. The minimum expected count is .64.				
Mental balance	Pearson Chi-Square	47.000 ^a	3	.000
	Likelihood Ratio	58.865	3	.000
a. 4 cells (50.0%) have expected count less than 5. The minimum expected count is 2.23.				
Sociability	Pearson Chi-Square	47.000 ^a	2	.000
	Likelihood Ratio	58.865	2	.000
a. 3 cells (50.0%) have expected count less than 5. The minimum expected count is .64.				
Compliance with the rules	Pearson Chi-Square	47.000 ^a	3	.000
	Likelihood Ratio	58.865	3	.000
a. 4 cells (50.0%) have expected count less than 5. The minimum expected count is .64.				

Table VII
Chi-Square Test (final assessment).

Observable aspects/ Competences/items	Chi-Square Test (final assessment)					
	Indicator/parameter	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Present themselves in appropriate sports equipment at physical education and sports classes a. 1 cells (25.0%) have expected count less than 5. The minimum expected cells is 3.83. b. Computed only for a 2x2 table	Pearson Chi-Square	7.554 ^a	1	.006	.005	.004
	Continuity Correction ^b	5.710	1	.017		
	Likelihood Ratio	11.062	1	.001		
	Fisher's Exact Test					
Immediately learn the rules, explanations, examples, after they have been taught a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 5.43. b. Computed only for a 2x2 table	Pearson Chi-Square	8.306 ^a	1	.004	.004	.003
	Continuity Correction ^b	6.536	1	.011		
	Likelihood Ratio	9.803	1	.002		
	Fisher's Exact Test					
Demonstrate curiosity, ask questions to understand work tasks a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 5.11. b. Computed only for a 2x2 table	Pearson Chi-Square	11.371 ^a	1	.001	.001	.000
	Continuity Correction ^b	9.253	1	.002		
	Likelihood Ratio	15.922	1	.000		
	Fisher's Exact Test					
Actively participates in all lesson topics a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 5.11. b. Computed only for a 2x2 table	Pearson Chi-Square	11.371 ^a	1	.001	.001	.000
	Continuity Correction ^b	9.253	1	.002		
	Likelihood Ratio	15.922	1	.000		
	Fisher's Exact Test					
Manifests discipline in work, during physical education classes a. 1 cells (25.0%) have expected count less than 5. The minimum expected count is 4.15. b. Computed only for a 2x2 table	Pearson Chi-Square	8.424 ^a	1	.004	.004	.002
	Continuity Correction ^b	6.516	1	.011		
	Likelihood Ratio	12.203	1	.000		
	Fisher's Exact Test					
He has a civilized vocabulary in communicating with colleagues a. 1 cells (25.0%) have expected count less than 5. The minimum expected count is 3.83. b. Computed only for a 2x2 table	Pearson Chi-Square	7.554 ^a	1	.006	.005	.004
	Continuity Correction ^b	5.710	1	.017		
	Likelihood Ratio	11.062	1	.001		
	Fisher's Exact Test					
Performs the given tasks, responsibilities a. 1 cells (25.0%) have expected count less than 5. The minimum expected count is 4.47. b. Computed only for a 2x2 table	Pearson Chi-Square	9.347 ^a	1	.002	.002	.001
	Continuity Correction ^b	7.372	1	.007		
	Likelihood Ratio	13.391	1	.000		
	Fisher's Exact Test					
Show respect when relating to others a. 1 cells (25.0%) have expected count less than 5. The minimum expected count is 3.51. b. Computed only for a 2x2 table	Pearson Chi-Square	6.732 ^a	1	.009	.009	.007
	Continuity Correction ^b	4.951	1	.026		
	Likelihood Ratio	9.963	1	.002		
	Fisher's Exact Test					
Generates conflicts between colleagues a. 1 cells (25.0%) have expected count less than 5. The minimum expected count is 3.19. b. Computed only for a 2x2 table	Pearson Chi-Square	5.954 ^a	1	.015	.019	.012
	Continuity Correction ^b	4.235	1	.040		
	Likelihood Ratio	8.905	1	.003		
	Fisher's Exact Test					
Distracts colleagues in classes. a. 3 cells (50.0%) have expected count less than 5. The minimum expected count is .32.	Pearson Chi-Square	4.159 ^a	2	.125		
	Likelihood Ratio	5.052	2	.080		
Communicativeness a. 1 cells (25.0%) have expected count less than 5. The minimum expected count is 3.19. b. Computed only for a 2x2 table	Pearson Chi-Square	5.954 ^a	1	.015	.019	.012
	Continuity Correction ^b	4.235	1	.040		
	Likelihood Ratio	8.905	1	.003		
	Fisher's Exact Test					
Sincerity/honesty a. 1 cells (25.0%) have expected count less than 5. The minimum expected count is 3.19. b. Computed only for a 2x2 table	Pearson Chi-Square	5.954 ^a	1	.015	.019	.012
	Continuity Correction ^b	4.235	1	.040		
	Likelihood Ratio	8.905	1	.003		
	Fisher's Exact Test					
Receptivity a. 1 cells (25.0%) have expected count less than 5. The minimum expected count is 3.19. b. Computed only for a 2x2 table	Pearson Chi-Square	5.954 ^a	1	.015	.019	.012
	Continuity Correction ^b	4.235	1	.040		
	Likelihood Ratio	8.905	1	.003		
	Fisher's Exact Test					
Mental balance a. 1 cells (25.0%) have expected count less than 5. The minimum expected count is 3.19. b. Computed only for a 2x2 table	Pearson Chi-Square	5.954 ^a	1	.015	.019	.012
	Continuity Correction ^b	4.235	1	.040		
	Likelihood Ratio	8.905	1	.003		
	Fisher's Exact Test					
Sociability a. 1 cells (25.0%) have expected count less than 5. The minimum expected count is 3.19. b. Computed only for a 2x2 table	Pearson Chi-Square	5.954 ^a	1	.015	.019	.012
	Continuity Correction ^b	4.235	1	.040		
	Likelihood Ratio	8.905	1	.003		
	Fisher's Exact Test					
Compliance with the rules. a. 1 cells (25.0%) have expected count less than 5. The minimum expected count is 3.19. b. Computed only for a 2x2 table	Pearson Chi-Square	5.954 ^a	1	.015	.019	.012
	Continuity Correction ^b	4.235	1	.040		
	Likelihood Ratio	8.905	1	.003		
	Fisher's Exact Test					

Discussion

The data from tables II and III show, regarding the experiment group, that the students' situation improved significantly for all measured items, corresponding to the three levels. With few exceptions (1 student in the item "Immediately learn the rules, explanations, examples, after they have been taught", 1 student in the item "Distracts colleagues in classes") desirable compartments and attitudes are regularly manifested in all students in the experiment group.

Tables IV and V present the results for initial and final assessments of items from the three levels for the control group. There is also an improvement in the results here. At the same time, at the final evaluation, it is noticed that there are still many students in whom there is no regularity of desirable behaviors. However, the consistent manifestation of undesirable behavior is found only in one student and only for one item ("Distracts colleagues in classes").

Next we performed an analysis based on the Chi-squared test. The test is used to assess whether there is a significant difference between two or more samples consisting of frequency data. We did this analysis for the initial and final evaluations. The results of statistical processing are presented in tables VI and VII.

Regarding the initial assessment, in most of the items there is a statistically significant difference, as Asymptotic Significance (2-sided) < 0.05. The difference is not statistically significant for the following items: "Immediately learn the rules, explanations, examples, after they have been taught"; "Demonstrate curiosity, ask questions to understand work tasks"; "Actively participates in all lesson topics"; "Actively participates in all lesson topics"; "Manifests discipline in work, during physical education classes"; "Generates conflicts between colleagues"; "Distracts colleagues in classes".

When analyzing the data resulting from the final assessment, the chi-squared test is converted into the Fischer test (since students can be grouped into two grades in both groups, resulting in 2 x 2 tables). The exception is the item "Distracts colleagues in classes" where students in the control group are distributed on three grades: 1 – Always; 10 – Occasionally; 21 – Never. Table VII shows that the differences between the two groups of students are statistically significant for each of the studied items, since Exact Sig. (2-sided) < 0.05.

Conclusions

1. Analyzing the data from the initial assessment in the sheets, it was found that the experimental group has a more favorable situation for most items (except compliance with the rules);

2. At the final assessment, there is an evolution in both groups, much more pronounced in the experimental group (in most items it is found that all students in the experiment group have acquired and regularly manifest their tested behavior).

3. The experiment group performed better in the competencies assessed as a result of practicing chess as an optional subject during 34 school weeks.

4. We have found that playing chess helps students develop psycho-social abilities: communicativeness, sincerity / honesty, receptivity, mental balance, sociability and compliance with rules.

5. We have found that practicing chess one hour a week helps students develop skills and behaviors by: presenting in appropriate sports equipment in physical education and sports classes; learning the rules, explanations, examples taught; demonstration of interest in work tasks; active participation in all lesson topics; manifestation of discipline in work, during physical education classes.

6. We also found that students who studied the optional subject "Education through chess" registered favorable results in terms of school discipline. Students have a civilized vocabulary in communicating with peers; perform the given tasks, responsibilities; show respect when relating to others; they do not generate conflicts between colleagues and do not distract colleagues in classes.

Conflicts of interest

We declare that there are no conflicts of interest.

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