

PARENTS' APPRECIATION OF THE IMPACT OF STRATEGIC GAMES INTRODUCED IN PHYSICAL EDUCATION CLASSES

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Abstract. *The curriculum at the American International School of Bucharest (AISB) centres around the principle of teamwork, serving as the foundation for this study. This research aims to be presented, examined, and refined to engage students actively and emotionally in the instructional process. Essential elements contributing to achieving the proposed objectives involve the use of experimental methods, emphasizing teamwork principles, and creating an environment rooted in safety, trust, engagement, and cooperation. The study assumes that the quality of the teaching process is enhanced through the application of internationally-used strategic games, validated by the perspectives of students, parents, and teachers. We find it appropriate to consider the views of parents, who believe that physical education class is extremely important for both the balanced development of children and its positive effect on their mental health as a result of exercising on a daily basis. A comparative study was conducted between a sample of Romanian middle school children and a sample of AISB students, revealing a multitude of effects induced by internationally-utilized strategic games, including the development of social skills, elimination of stress and intellectual fatigue, improvement of motor skills, and increased knowledge about different sports. These games also promote teamwork, involve all students in learning, and instil an understanding of game rules and sports competition, fostering respect for teammates and opponents. Additionally, strategic games contribute to socialization, fun, relaxation, all within a backdrop of maintaining a positive attitude.*

Keywords: *strategic games, teamwork, parents' opinions, skills, fair play.*

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Introduction

The principle underlying the curriculum at the American International School of Bucharest (AISB) is teamwork, serving as the catalyst for the development of this study. This research seeks to be presented, examined, and improved to actively engage students emotionally in the instructional process.

The objective of the games is to cultivate both motor skills and personality traits. These games necessitate teamwork, involving coordination, synchronization, and communication with teammates, thereby positively influencing interpersonal relationship development. This includes cooperation, adapting actions to those of teammates, establishing and recognizing

leadership, making decisions, and assuming tasks. Furthermore, the games foster the development of a critical/self-critical spirit, initiative, and the ability to observe and act.

Teacher supervision is essential, given that players may be biased and inclined to break rules to secure a win. Teachers play a pivotal mediating role by ensuring the inclusion of all students in the game, irrespective of their motor potential. Additionally, they are tasked with supervising, guiding, and managing mistakes, unsportsmanlike conduct, and lack of respect for opponents or teammates while preventing verbal or physical violence. Teachers must maintain firmness and intervene whenever rules are breached.

Problem statement

In our opinion, implementing an unconventional game-based intervention that focuses on tactics, decision-making, and the use of personal intuition to achieve victory could serve as preliminary preparation, embracing a holistic approach tailored to students' life experiences, connections with other school subjects, or similar situations encountered.

The novelty of this study consists in the introduction of internationally-used strategic games from the AISB curriculum, with positive effects on several levels acknowledged by surveyed parents.

The development of creativity and initiative is a requirement of the school curriculum, which involves giving children some freedom of thought, and this aspect must be constantly exploited, regardless of their level of physical training. The curriculum at the American International School of Bucharest posed a challenge for this study, as we aimed to apply sequences from internationally-used strategic games to physical education lessons in Romanian schools. The outcomes were assessed through a questionnaire gauging parents' appreciation for this innovative approach.

Recognizing that tactical solutions play a crucial role in achieving good results and that extensive focus on game-specific techniques can be monotonous and less motivating, we contend that understanding the game should be prioritized. This, in turn, motivates students to develop their techniques and invest time in improving their performance. The “Inquiry-based learning” (IBL) method was used in lessons conducted with both middle school children and AISB students, considering that the way of approaching the assimilation and application of the game rules was very important. IBL involves teaching and learning methods that develop students' curiosity and encourage their involvement in investigations, critical thinking, and knowledge discovery. For this reason, IBL is also known as discovery learning, independent discovery, heuristic learning (Craig, 1965), experiential learning (Boud et al., 1985) or constructivist learning (Jonassen, 1991), and this is a method by which teachers make students responsible during the learning process.

The International Baccalaureate adopts a constructivist educational approach, and through the reciprocal action of asking, doing, and thinking, it develops young people so that they learn continuously, independently and in collaboration with others. Teaching and learning are done through practice, and integrity, honesty and a sense of fairness are integral components in the curriculum.

Eseryel et al. (2014) demonstrate that solving problems that arise in a game-based learning environment is influenced by students' motivation and engagement, underscoring the importance of creating such a learning environment. The authors elaborate on the fact that: (1) there are complex interactions between students, engagement, motivation, and problem-solving skills; (2) the game can improve or limit students' choices, and the relationships between students can influence their engagement; (3) the design of game tasks can affect students' self-confidence and perception of their own skills.

Teachers are pivotal in this context, not merely as sources of information but as guides who encourage students to ask questions, reflect, and use critical thinking in order to discover, re-evaluate and develop new meanings. "Teachers need to learn to modify learning tasks, design learning situations that give students the choice of possible response options, and teach students to justify the reason for their choices" (Díaz-Cueto et al., 2010). Teacher guidance in this process is beneficial for students (Sandoval & Reiser, 2004). Physical education teachers can improve their knowledge and tactical schemes used under the guidance of specialists in the field by explaining to them the unique situations that may occur during teaching.

The game provides opportunities for students to understand certain structures of competitive sports games, which is why they can be used as a starting point in learning them. The concept of Teaching Games for Understanding (TGfU) was first proposed by Bunker and Thorpe (1982) "as an alternative to traditional, technique-led approaches to games teaching and learning" (Kirk & MacPhail, 2002), whose aim was to develop the technique in an isolated environment.

TGfU, which is also known as the "tactical game model" (Mitchell et al., 2006), "revised TGfU model" (Kirk & MacPhail, 2002), "expanded TGfU model" (Holt et al., 2002, 163) or even "game sense" or "tactical games", is a constructivist approach focused on the student and the game, in which the teacher appears as a facilitator, and the student is active and involved in the learning process. In other words, this intervention places the student in a game situation where tactical awareness, decision-making, and problem-solving are very important (Bunker & Thorpe, 1986). TGU has been advocated as a pedagogy to improve decision-making, skill execution, and physical fitness in physical education teaching and sports coaching (Kinnerk et al., 2018).

To maximize learning in a constructivist approach, students need to solve problem situations within an authentic environment. The traditional approach, which is "based on games broken down into various skills, isolated skill practice, and learning not placed in the realistic context of the game, does not consistently yield the desired results" (Díaz-Cueto et al., 2010).

TGfU is a pedagogical method that generates a special understanding of the game while increasing the level of physical activity, participation, and motivation during the physical education class (Webb et al., 2005). It revolves around teaching games based on a conceptual approach, i.e., through the use of tactical instead of technical strategies for the progression of motor skills (Wright et al., 2005). Also, Harvey (2021) sustained that the creation of explicit learning outcomes - based on specific tactical problems or more general principles of play - is an important pedagogical factor.

“Sport Education (SE) and Teaching Games for Understanding (TGfU) are two curriculum models that were developed to help students participate in fair and equitable ways and challenge their thinking beyond the replication of techniques and skills” (Hastie & Curtner-Smith, 2006). According to Gil-Arias et al. (2021), the “use of hybrid TGfU/ Sport Education units promotes an autonomy-supportive, inclusive, and equitable learning environment where all students [...] have opportunities to increase their engagement, enjoyment, and social interactions within physical education lessons”. This hybrid model (TGfU and SE), which includes cooperative learning and/or teaching for personal and social responsibility, seems to be an advantage “because the former can promote outcomes in many different domains” (González-Víllora et al., 2019).

Alcalá and Garijo (2017) demonstrated in their study that "the TGfU model had a significant impact on students' motivation in sport, also producing an increase in the perspective of achievement. This shows a direct link between this methodology and a greater involvement of students in sport."

In a study by Harvey et al. (2010), two experienced football coaches employed the TGfU approach over a 12-week training period, with one coach noting how this intervention "could help develop not only his own coaching practice but advance player learning through the appropriate use of questioning and stepping back."

Turner and Martinek (1998) tested the validity of the TGfU model by comparing it to a technique approach used in field hockey. “The technique method focused primarily on skill instruction where the skill taught initially was incorporated into a game at the end of each lesson. The games for understanding approach emphasized developing tactical awareness and decision making in small game situations” (Turner & Martinek, 1998) These authors observed that the TgfU group scored significantly higher than the other group in terms of passing decision-making, control and passing execution, but for hockey skills, the technique group recorded better times during the post-test.

Students, when asked about TGfU, said that their understanding of deeper game structures and positive emotions were interdependent. Feelings of empowerment, arising from increased understanding, contributed to their enjoyment and increased self-esteem (Light, 2003; Mesquita et al., 2012). Students believe that they acquire sufficient skills to participate enthusiastically in sports games, understanding and applying suitable strategies for the complexity of the game played.

The opinions of students, parents and teachers are very important. A comparative study was conducted between a sample of Romanian middle school children and a sample of AISB students, in order to investigate the effects induced by internationally-used strategic games, namely: development of social skills, elimination of stress and intellectual fatigue, improvement of motor skills and knowledge about different sports, teamwork promotion, involvement of all students in learning and observing game rules while getting used to the sports competition, respect for teammates and opponents, socialization, fun and relaxation, all while maintaining a positive attitude.

Methodology

Purpose of the study

The aim of the research was to investigate parents' perception regarding the effects of the introduction of internationally-used strategic games in the physical education lessons.

Hypothesis

The quality of the teaching process is improved through strategic games used at an international level.

Participants and Procedure

A total of 115 parents participated in the research, contributing to the investigation of their perceptions. The study involved 30 seventh-grade students from the Middle School 280, in Bucharest, forming the experimental group, compared to a control group of seventh-grade students from the American International School of Bucharest, also numbering 30 participants. The study started in September 2018 and continued until June 2019, with the agreement of the classroom teachers at both schools.

The study was carried out in parallel in both schools, requiring time, understanding and flexibility from the classroom teachers to avoid conflicts with the established curriculum. All students willingly participated in the study, having given their consent in advance. Conducted in parallel at both institutions, the study necessitated time, understanding, and flexibility from the classroom teachers.

For the questionnaires, the online platform "Google forms" was used, and the corresponding link to each questionnaire was distributed. It has been found to be an efficient means for both distribution and data collection.

The questionnaire was administered at the beginning of the year (pre-test) and at the end of the period (post-test). Throughout the entire school year, students were instructed in the specific rules of Gaelic football and Frisbee, along with preparatory games during the training period, such as "Head and Page," "Who is the Fastest," "Tic-tac-toe Relay," "Hit Below the Knee," "Capture the Flag," "Catch Me," "Dodgeball," "Kickball," "Octopus," and "Speedball." Therefore, the study started with some simple games, progressively introducing more complex technical/tactical elements, culminating with the introduction of Gaelic football and Frisbee towards the end of the first semester, representing the two essential strategic games.

It is worth noting that the study adhered to standards of conduct contributing to the institutional cohesion of classes involved in the educational activity, fostering an environment based on cooperation, equity, and competition while respecting rules and procedures.

In the study a questionnaire was applied to the parents, to capture their views on student engagement in the physical education lesson, program characteristics, the importance of this school subject, and their suggestions in a preliminary study.

The experiment took place between 2018 and 2019, during which parents were asked to complete a questionnaire expressing their opinions about the introduction of internationally-used strategic games in the physical education lesson.

At the outset, a questionnaire was administered to parents to gauge their views on the effectiveness, novelty, and interest in internationally-used strategic games. At the conclusion of the experiment, an improved questionnaire was administered, allowing parents to emphasize the effectiveness, participation, and benefits of introducing internationally-used strategic games in the physical education curriculum.

In order to organise, synthesise and describe the data, we used the IBM SPSS 22 program. Using descriptive statistics (which are essential for substantiating inferential procedures), the following descriptive indicators were reported: minimum value, maximum value, mean and standard deviation. Graphical representation visually expresses the processed data and the research findings (using figures to make the statistical information visible and thus facilitate an overall understanding of the data obtained).

Results

The survey is designed to gather the opinions of parents on student engagement in physical education lessons, the characteristics of the programme, the importance of this school subject, as well as their suggestions. The questionnaire comprises six main items.

The results obtained underscore parents' positive acknowledgment of the changes observed following the introduction of new elements from strategic games into the Romanian curriculum, with visible effects on students' behaviour.

Table 1. *Correlations in the questionnaire for parents*

	Q1	Q2	Q3	Q4	Q5	Q6
Q1	1					
Q2	0.4385	1				
Q3	0.6268	0.6421	1			
Q4	0.2921	-0.0245	0.1553	1		
Q5	0.2502	0.4539	0.3417	0.6047	1	
Q6	0.3999	0.5700	0.5039	0.1186	0.5831	1

Stronger correlations are indicated by the orange cells, while the green one shows values very close to 0. Therefore, there is a lack of correlations between Q2 and Q4, and stronger correlations between Q6 and Q2, Q3, Q5, between Q3 and Q1, Q2, and between Q4 and Q5.

The questions were rated on a scale of 1 to 5 (with 1 meaning the lowest value, and 5, the highest value).

Table 2. Descriptive statistics for the entire sample of parents in the pre-test

	N	Minimum	Maximum	Mean	Standard deviation
1. How important is the physical education class to your child?	115	3.00	5.00	4.71	.49
2. How effective do you think physical education classes are in developing your child's skills?	115	3.00	5.00	4.35	.58
3. How effective do you think physical education lessons are in developing your child's interest in physical education and a healthy lifestyle?	115	2.00	5.00	4.49	.70
4. How much does your child enjoy the physical education class?	115	3.00	5.00	4.16	.79
5. How much do you think your child is engaged in the physical education lesson?	115	2.00	5.00	4.00	.78
6. Do you appreciate the physical education programme attended by your child?	115	1.00	5.00	3.57	.93

- As shown in Table 2, participants have pre-test scores between a minimum of 3 and a maximum of 5, with a mean of 4.71 and a standard deviation of .49, in terms of the extent to which they believe that physical education classes are important for their children;

- Scores between a minimum of 3 and a maximum of 5, with a mean of 4.35 and a standard deviation of .58 are obtained for the extent to which they believe that physical education classes are effective in developing their children's skills;

- Scores between a minimum of 2 and a maximum of 5, with a mean of 4.49 and a standard deviation of .70 are obtained for the extent to which they think that physical education classes are effective in developing their children's interest in physical education and a healthy lifestyle;

- Scores between a minimum of 3 and a maximum of 5, with a mean of 4.16 and a standard deviation of .79 are obtained for the extent to which they think that their children enjoy the physical education class;

- Scores between a minimum of 2 and a maximum of 5, with a mean of 4 and a standard deviation of .78 are obtained for the extent to which they believe that their children are engaged in the physical education lesson;

- Scores between a minimum of 1 and a maximum of 5, with a mean of 3.57 and a standard deviation of .93 are obtained for the appreciation of the physical education programme attended by their children.

Table 3. Descriptive statistics for the entire sample of parents in the post-test

	N	Minimum	Maximum	Mean	Standard deviation
1. How important is the physical education class to your child?	115	3.00	5.00	4.64	.58
2. How effective do you think physical education classes are in developing your child's skills?	115	3.00	5.00	4.54	.59
3. How effective do you think physical education lessons are in developing your child's interest in physical education and a healthy lifestyle?	115	3.00	5.00	4.49	.62
4. How much does your child enjoy the physical education class?	115	3.00	5.00	4.45	.70
5. How much do you think your child is engaged in the physical education lesson?	115	3.00	5.00	4.45	.75
6. Do you appreciate the physical education program attended by your child?	115	1.00	5.00	4.30	.91

- As shown in Table 3, participants have pre-test scores between a minimum of 3 and a maximum of 5, with a mean of 4.64 and a standard deviation of .58, in terms of the extent to which they believe that physical education classes are important for their children;

- Scores between a minimum of 3 and a maximum of 5, with a mean of 4.54 and a standard deviation of .59 are obtained for the extent to which they believe that physical education classes are effective in developing their children's skills;

- Scores between a minimum of 3 and a maximum of 5, with a mean of 4.49 and a standard deviation of .62 are obtained for the extent to which they think that physical education classes are effective in developing their children's interest in physical education and a healthy lifestyle;

- Scores between a minimum of 3 and a maximum of 5, with a mean of 4.45 and a standard deviation of .70 are obtained for the extent to which they think that their children enjoy the physical education class;

- Scores between a minimum of 3 and a maximum of 5, with a mean of 4.45 and a standard deviation of .75 are obtained for the extent to which they believe that their children are engaged in the physical education lesson;

- Scores between a minimum of 1 and a maximum of 5, with a mean of 4.30 and a standard deviation of .91 are obtained for the appreciation of the physical education program attended by their children.

Table 4. Pre-test differences in the responses of parents from the control and experimental groups

	t	df	p	Mean difference	SE of the mean	d
Importance of the sport class	-2.757	57.00	0.008	-0.335	0.122	-0.717
Skill development effectiveness	-0.431	57.00	0.668	-0.066	0.152	-0.112
Development of the interest in sport	-3.078	57.00	0.003	-0.528	0.171	-0.802
Sport enjoyment	0.083	57.00	0.934	0.017	0.208	0.022
Engagement in the sport lesson	-0.328	57.00	0.744	-0.068	0.207	-0.086
Appreciation of the sport class	-0.315	57.00	0.754	-0.077	0.245	-0.082

Table 5. Post-test differences in the responses of parents from the control and experimental groups

	t	df	p	Mean difference	SE of the mean	d
Importance of the sport class	-3.444	57.00	0.001	-0.478	0.139	-0.898
Skill development effectiveness	-2.353	57.00	0.022	-0.353	0.150	-0.614
Development of the interest in sport	-3.538	57.00	<.001	-0.528	0.149	-0.922
Sport enjoyment	-2.656	57.00	0.010	-0.463	0.174	-0.693
Engagement in the sport lesson	-4.832	57.00	<.001	-0.803	0.166	-1.260
Appreciation of the sport class	-7.279	57.00	<.001	-1.260	0.173	-1.898

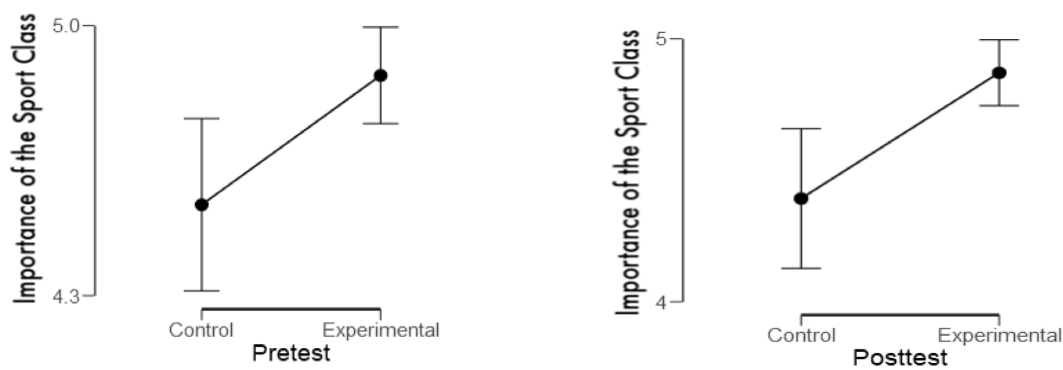


Figure 1. Importance of the sport class – Pre-test-post-test differences between the control and experimental groups

There are significant pre-test differences between the control and experimental groups as regards the extent to which parents believe that the sport class is important for their children, with the experimental group reporting a higher level of importance; there are significant post-test differences between the control and experimental groups as regards the extent to which parents believe that the sport class is important for their children, with the experimental group reporting a higher level of importance (Figure 1).

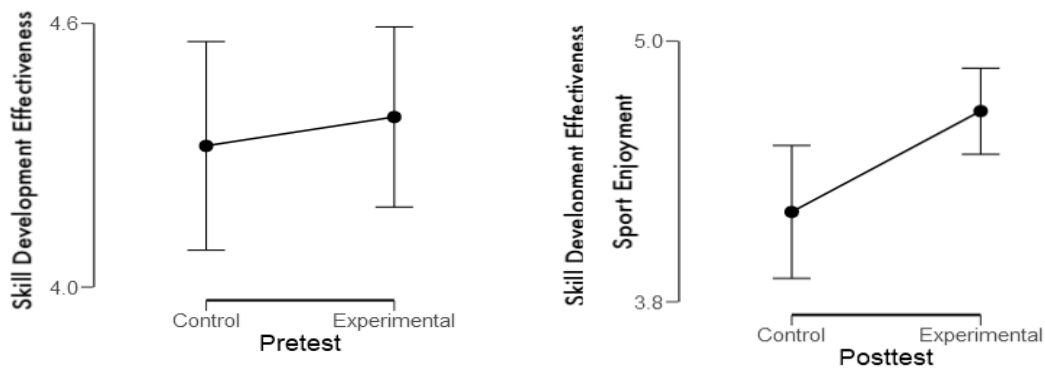


Figure 2. Skill development effectiveness – Pre-test-post-test differences between the control and experimental groups

There are no significant pre-test differences between the control and experimental groups as regards the extent to which parents think that the sport class is effective in developing their children’s skills; there are significant post-test differences between the control and experimental groups as regards the extent to which parents think that the sport class is effective in developing their children’s skills, with the experimental group reporting a higher level of effectiveness (Figure 2).

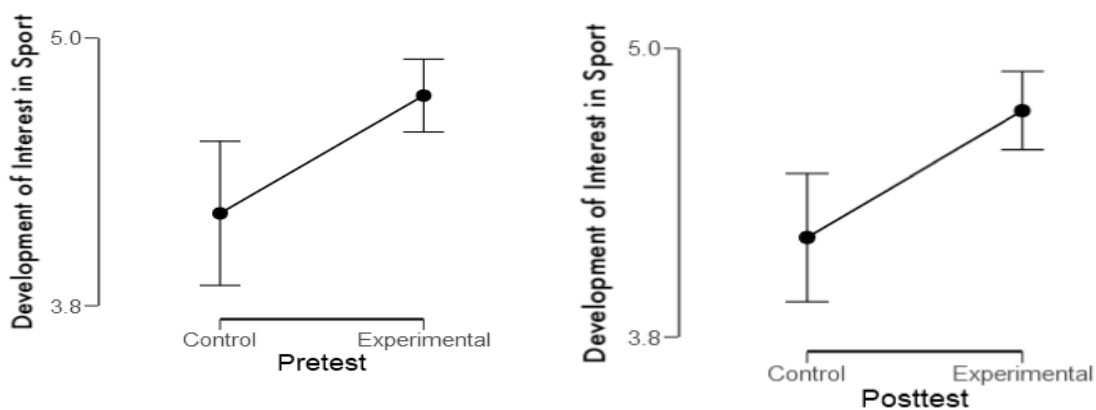


Figure 3. Development of the interest in sport – Pre-test-post-test differences between the control and experimental groups

There are significant pre-test differences between the control and experimental groups as regards the extent to which parents believe that sport classes are effective in developing their

children’s interest in sport and a healthy lifestyle, with the experimental group reporting a higher level of effectiveness; there are significant post-test differences between the control and experimental groups as regards the extent to which parents believe that sport classes are effective in developing their children’s interest in sport and a healthy lifestyle, with the experimental group reporting a higher level of effectiveness (Figure 3).

There are no significant pre-test differences between the control and experimental groups as regards the extent to which parents think that their children enjoy the sport class; there are significant post-test differences between the control and experimental groups as regards the extent to which parents think that their children enjoy the sport class, with the experimental group reporting a higher level of enjoyment.

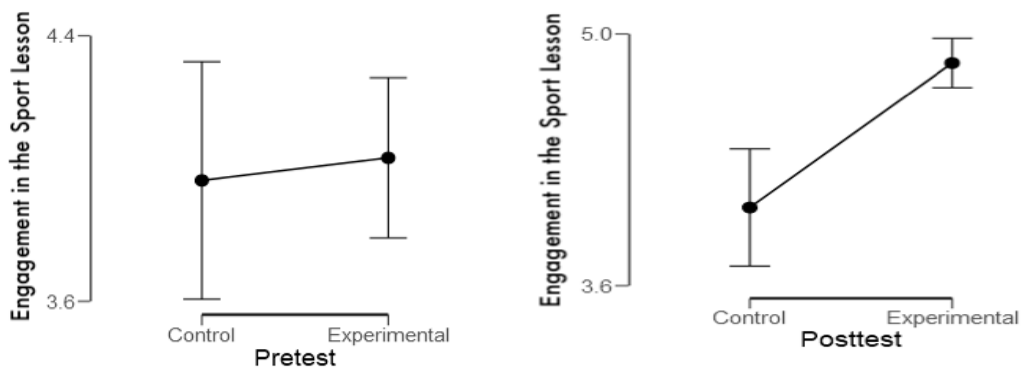


Figure 4. Engagement in the sport lesson – Pre-test-post-test differences between the control and experimental groups

There are no significant pre-test differences between the control and experimental groups as regards the extent to which parents believe that their children get engaged in the sports lesson; there are significant post-test differences between the control and experimental groups as regards the extent to which parents believe that their children get engaged in the sports lesson, with the experimental group reporting a higher level of engagement (Figure 4).

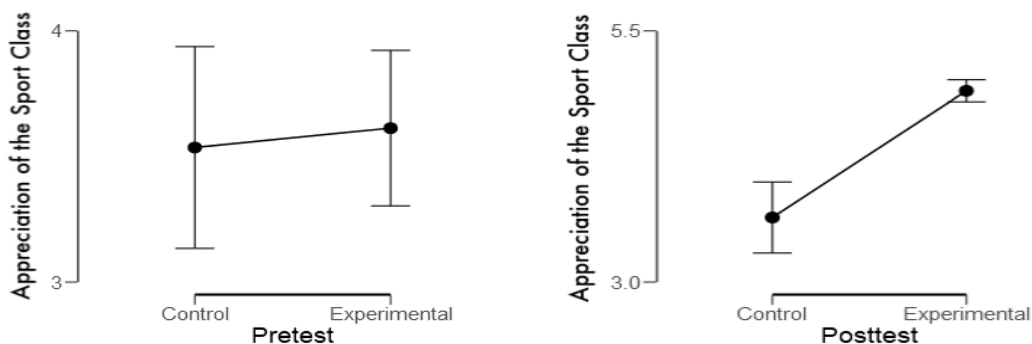


Figure 5. Appreciation of the sport class – Pre-test - post-test differences between the control and experimental groups

There are no significant pre-test differences between the control and experimental groups as regards the extent to which parents appreciate the physical education program attended by their children; there are significant post-test differences between the control and experimental groups as regards the extent to which parents appreciate the physical education program attended by their children, with the experimental group reporting a higher level of appreciation (Figure 5).

Discussion and Conclusion

“Sport Education (SE) and Teaching Games for Understanding (TGfU) are two curriculum models that were developed to help students participate in fair and equitable ways and challenge their thinking beyond the replication of techniques and skills” (Hastie & Curtner-Smith, 2006). According to Gil-Arias et al. (2021), the “use of hybrid TGfU/ Sport Education units promotes an autonomy-supportive, inclusive, and equitable learning environment where all students [...] have opportunities to increase their engagement, enjoyment, and social interactions within physical education lessons”. This hybrid model (TGfU and SE), incorporating cooperative learning and/or teaching for personal and social responsibility, appears advantageous “because the former can promote outcomes in many different domains” (González-Víllora et al., 2019).

The questionnaire for parents highlights a positive appreciation for the physical education lessons, indicating a heightened level of student involvement. Parents believe that these classes are not only effective but also essential for fostering their children's interest in sports and a healthy lifestyle. The diversity of lessons, attributed to the integration of internationally-used strategic games, is particularly valued. These games offer social benefits by providing children with opportunities to acquire new skills while developing friendships (Zecevic, 2010).

Parents appreciated the positive effects obtained since the introduction of these and approaches, and emphasized the benefits in various aspects. They noted an improvement in children's interest in physical education lessons, specifically those incorporating content from internationally-used strategic games, and noted increased energy levels and positive physical and behavioural changes.

Parents expressed a positive appreciation, noting a surplus of energy, enthusiasm, motivation, and significant changes in both physical appearance and behaviour.

They observed increased energy levels throughout the day, particularly compared to periods of inactivity or low-effort activity preceding the study. Parents also noted the students' enhanced motivation and enthusiasm for the newly introduced concepts.

The results support the pivotal role of physical education in shaping students' bio-psychosocial aspects, which is also recognized, appreciated, and supported by the parents of the students involved in the study.

In the case of Romanian school respondents, parents emphasize the importance of the physical education class, especially in contributing to both physical and mental development. They underscore its role in promoting teamwork and fostering the understanding that a child can find enjoyment in sports even if not excelling in a particular one. Furthermore, physical education is seen as a platform for teaching students respect for rules and others, instilling discipline, fostering familiarity with competition, and, importantly, promoting socialization.

Parents in both schools assert the significance of physical education not only for their children's physical and mental development but also for the cultivation of social relationships. They note its role in familiarizing students with competition and encouraging active participation in all activities, irrespective of the outcome.

In our opinion, which is in agreement with that of parents, the use of motor skills and knowledge derived from strategic games used within the international education system can lead to outstanding physical and cognitive outcomes.

Thus, the novelty elements in the game content, coupled with the formative and engaging nature of games included as themes in the lesson sequences could increase the effectiveness and quality of the teaching process. Consequently, we recommend the inclusion of these new elements, namely internationally-used strategic games, in the Romanian school curriculum.

Specialists/teachers play a crucial role in making students understand the importance of fairness, honesty, and integrity during gameplay, particularly when there are conflicting situations that they have to manage. Therefore, teachers should establish goals focused on fostering cooperation among students, employ strategies that prompt decision-making, and assist students in developing the ability to handle wins and losses through fair play. These goals are both anticipated and valued by all parents. Creating a climate that motivates and instils a sense of security can encourage active and emotionally engaged participation from students in physical education classes.

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Informed Consent Statement: The written informed consent for the participants in this study was obtained.

Data Availability Statement: Data are available upon request to the contact author.

Conflicts of Interest: The authors declare no conflict of interest.

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