

## The playground as a laboratory for playful practices and social relations El patio de recreo como laboratorio de prácticas lúdicas y de relaciones sociales

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**Abstract.** Playtime in the playground at school is the object of study for its educational potential, a moment where children show their behavior in a natural way and their participation is free and voluntary according to interests and preferences. This study aimed to determine the effects of an intervention on the diversity of games played during school recess and on interactions among children. This is a quasi-experimental study using a mixed methodology, involving 270 children from two elementary schools in the north of Portugal. The instruments used for data collection were the questionnaire, field notes and video footage. After applying the pre-test, the didactic intervention and the post-test, we observed an increase in the practice of activities and a greater diversity of games performed (movement games), especially among girls, and a notable rise in peer interactions, particularly between different genders.

**Keywords:** Playtime, school recess, playground, play, children, elementary school, relationships.

**Resumen.** El tiempo de juego en el patio de recreo del colegio es objeto de estudio por su potencial educativo, un momento donde el alumnado muestra su comportamiento de forma natural y su participación es libre y voluntaria, adaptada a sus intereses y preferencias. Este estudio tuvo como objetivo determinar los efectos de una intervención sobre la diversidad de juegos realizados en el recreo escolar y sobre las interacciones de niños y niñas con sus respectivos pares. Se trata de un estudio cuasi experimental de metodología mixta, en el que participaron 270 niños y niñas de dos escuelas de primer ciclo de educación primaria del norte de Portugal. Los instrumentos utilizados para la recogida de datos fueron el cuestionario, notas de campo y grabaciones de video. Una vez aplicado el pretest, la intervención didáctica y el postest, se constató un aumento en la práctica de actividades y una mayor diversidad de los juegos realizados (juegos de movimiento), especialmente entre las niñas, incrementándose también las interacciones entre pares (especialmente las referentes a intergénero).

**Palabras clave:** Tiempo de juego, recreo escolar, patio de juegos, jugar, niños, educación primaria, relaciones interpersonales.

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### Introduction

One of the main functions of the current schools is to contribute to the integral development of students, where practical experiences facilitate their gradual integration into real-life contexts, understood as life in society (Rodríguez-Fernández et al., 2020a), where people apply a system of values that, over time, has been presented in a context that should guide human behavior towards a more just and supportive society (Álvarez, 2022; Faustinelli, 2022). Within schools, a complex network of social relationships is established, both among peers (Rodríguez-Fernández et al., 2020b) and between students and adults (Fructuoso, 2016; Luis et al., 2020; Rodríguez-Fernández et al., 2019). This network facilitates communication and interaction through which students learn and attribute meaning to the teaching-learning process; a crucial stage that contributes to the development of the child's personality (Gallardo-López & Gallardo-Vázquez, 2018).

Due to its spatial and temporal organization, school recess is the most favorable time for students to practice their interpersonal relationships (Fructuoso, 2016; González-Plate et al., 2022; Massey et al., 2018). It's a moment marked by conflicts and their resolution, friendships and rejections, laughter and tears, an essential moment of socialization, where social relationships are enacted and gain significance. It's known that when organized activities are implemented (with adult intervention), children tend to develop their capacities and motor skills, usually more than expected (Salas Sánchez & Vidal Conti, 2022). Additionally, during recess,

children typically engage in their own games and free activities (Rodríguez-Fernández et al., 2019), which contributes to understanding and improving their autonomy and creativity, while a significant development of learning and motor skills occurs. Given the existing differences in motor skills among children from the 1<sup>st</sup> to 4<sup>th</sup> grades (6-9 years old), interventions involving physical activities and games during recess must account for these differences to prevent the exclusion of any child from these activities and to maintain motivation across all age groups (Stellino et al., 2010).

Several studies have been conducted to promote physical activity in elementary schools, suggesting that any intervention component is sufficient to modify physical activity. For instance, simply allocating play space, introducing materials in the school playground or painting markings in the game space, are enough to change behavior, increase children's physical activity, and positively affect peer interactions (Hellín-Martínez et al., 2022; Mellado-Rubio et al., 2023; Pastor-Vicedo et al., 2021; Rodríguez-Rodríguez et al., 2021). Interactions between girls and boys take place in different contexts, such as family, school, peer groups and social networks. During early childhood, play and other activities are fundamental pathways for these interactions. The nature of these interactions is influenced by whether a child was born a boy or a girl or by the specific context in which they were raised. As the game is a multidimensional phenomenon, it's affected by the various geographic, social and cultural factors (Cano Moya et al., 2023). These interactions reflect norms and values socially defined as belonging to either the female or male gender, thus creating the

gender stereotype, which are also evident in children's games. For example, the perception that certain recreational games are more suitable for boys or girls influences children's choice of activities, which in turn affects their motor vocabulary and social interactions during recess (Gomes et al., 2003).

This study aimed to determine the effects of an intervention on the diversity of games played during school recess and on children's interactions with their peers. We intend to verify the differences between the control and the intervention groups, both in the pre- and post-intervention phases, and between the two phases, regarding the diversity of games played and peer interactions in the playground.

The relevance and scientific interest of this research lie in its focus on optimizing recess time to provide students with a broader range of activities and, moreover, in ensuring that these activities promote equality peer education, and improved social relations among students of different ages and genders, aspects that will help better train students. In this pertinent underexplored field of research, this research will contribute to a better knowledge of the opportunities provided by school recess as a means for promoting, equality and the practice of physical and sporting activities, based on the value of the results and evidence presented.

## Materials and Methods

### Participants

Two hundred and seventy children from two elementary schools in northern Portugal participated in the study. Of these, 114 were part of the School/Intervention Group (I.G.) and 156 were part of the School/Control Group (C.G.). Participants were aged between 6 and 10 years old, with a mean age of  $7.45 \pm 1.14$  and similar distribution of boys and girls (about 44.3% and 55.7% respectively).

### Institutional Review Board Statement

The study was conducted in accordance with the Declaration of Helsinki and approved by the Institutional Review Board of Direção Geral de Inovação e Desenvolvimento Curricular (DGIDC) of Ministério da Educação of Portugal.

### Study design and measures

This is a quasi-experimental study, using a mixed-methods approach, which combines quantitative and qualitative methods to provide a comprehensive analysis of the research question. Quantitative methods: describe the use of numerical data collection tools such as a questionnaire and statistical analysis to measure changes in the diversity of games and peer interactions. These methods help assess the effectiveness of the intervention through objective metrics. The qualitative methods involve the use of field notes and video footage to gather qualitative insights into children's behaviors and interactions during recess. These methods provide contextual understanding and depth to complement the quantitative findings (Creswell & Plano Clark,

2017).

Thus, the following were used:

- A questionnaire (Baptista, 2016; Magalhães & Hill, 2016) with closed and open questions, divided into four large blocks of information: socioeconomic identification, performed and preferred practices (Pereira & Neto, 1997), peer interaction and intervention.
- Field notes, collected during direct observation of the intervention.
- Video footage of activities conducted at recess.

### Data collection procedures

Before conducting the study, the corresponding authorizations were requested (Monitoring of Surveys in School Environments, directors of the schools where the study was conducted and for the parents of the students who participated in the study).

The variables "games played at recess" and "children's interactions at recess" were previously analyzed during the pre-intervention phase (pre), to assess the homogeneity between the studied groups (Control Group and Intervention Group). Later, the same variables were analyzed, in the phase immediately following the intervention (post). It should also be noted that there was a 4-month interval between the pre- and post-intervention phases, with the first phase conducted in the middle of the first academic term (November) and the second phase, immediately after the intervention, at the end of the second academic term (March).

Data collection for this study followed these steps: Pre-test (conducted at both the control and intervention schools, involving the application of the questionnaire and filming in the playgrounds for 20 minutes each day over one week), Intervention (involving the implementation of 1 or 2 recreational games per day in the recesses over three weeks), Post-test 1 (carried out at both schools in the week immediately following the intervention, with the application of the questionnaire and filming recess for 20 minutes each day over one week), and Post-test 2 (conducted two and a half months after the intervention, only at the intervention school, following the same procedure as in post-test 1).

### Statistical analysis

With the questionnaire data (closed questions) a descriptive statistical treatment and analysis was conducted using the Statistical Package for the Social Sciences (SPSS) software for Windows. The open questions were subjected to content analysis, from which the categories presented in the tables shown in the presentation of results emerged. Additionally, all information recorded in the filming and the field notes taken by the researchers was used.

## Results

We verified whether there were any changes between the control and intervention groups during the two phases

of the intervention evaluation. For this analysis, we present tables 1, 2, 3 and 4. In tables 1 and 3, we analyze the frequencies (n) and percentages (%), accounting for the total number of games played by children in recess, as well as the average number of games played per child ( $\bar{X}$ ). Tables 2 and 4 show the frequency (n) and percentage (%) of each game, accounting for the total sample (n=270) and the samples of each group studied, I.G. (n=114) and C.G. (n=156).

Table 1 shows children play different games on the playground, mainly movement games, followed by board and electronic games and, finally, other games. When analyzing the average number of games played per child, between the first (Pre) and second (Post) phases of the intervention, we observed a decrease in all game categories, for both groups, from the first to the second moment. This decrease is more pronounced in the Control Group than in the Intervention Group. For both groups, we found remarkably close values for the three categories of games in the first moment of appreciation and, although without great demarcation. In the

second phase, students in the Intervention Group showed a greater concentration on movement games and less on board and electronic games.

As shown in Table 2 that, during the initial phase of the study (Pre-intervention), in fifteen of the twenty games analyzed there were no significant differences between the Control Group and de Intervention Group, confirming the homogeneity between the two groups regarding the types of games played at the two schools. In summary, looking into the diversity of games played by children on the school playground, Tables 1 and 2 indicate that this diversity decreases throughout the school year, as there was a reduction in the diversity of games practiced between the two phases of the intervention in both groups. Although the intervention did not increased the diversity of games played during recess, it positively influenced the maintenance of active play and reduced more sedentary behaviors among children.

Table 1. Diversity of games played in recess by game category, in the pre- and post- intervention phases in both groups (I.G. and C.G)

Games		Pre-Intervention Phase			Post-Intervention Phase			
		I.G. n=114	C. G. n=156	Total n=270	I.G. n=114	C.G. n=156	Total n=270	
Movement games	n	473	617	1090	435	523	958	
	%	70,4	70,8	70,8	75,0	73,04	73,92	
Average of movement games played by children		$\bar{X}$	4,15	3,96	4,04	3,82	3,35	3,55
Board and electronic games	n	163	216	379	134	183	317	
	%	24,26	24,80	24,56	23,10	25,56	24,46	
Average of board and electronic games played by children		$\bar{X}$	1,43	1,38	1,40	1,18	1,17	1,17
Other games	n	36	38	74	11	10	21	
	%	5,36	4,36	4,80	1,90	1,40	1,62	
Average of other games played by children		$\bar{X}$	0,32	0,24	0,27	0,10	0,06	0,08
Total games played at recess	n	672	871	1543	580	716	1296	
	%	100,0	100,0	100,0	100,0	100,0	100,0	
Average of total games played at recess by children		$\bar{X}$	5,89	5,58	5,71	5,08	4,59	4,80

Legend: I.G. (Intervention Group), C.G. (Control Group). Source: own elaboration.

Table 2. Diversity of games played in recess, in the Pre- and Post- Intervention phases, in the two groups (Control and Intervention), by game

Games		Pre-Intervention Phase				Post-Intervention Phase					
		I.G. n=114	C.G. n=156	Total n=270	Dif.	P	I.G. n=114	C.G. n=156	Total n=270	Dif.	P
Movement games											
Elastic band	n	12	4	16	8	*	4	3	7	1	NS
	%	10,5	2,6	5,9	7,9	0,006	3,5	1,9	2,6	1,6	NS
Hopscotch	n	47	34	81	13	**	45	28	73	17	***
	%	41,2	21,8	30	19,4	0,001	39,5	17,9	27	21,6	0,000
Jumping Rope	n	42	65	107	-23	NS	36	44	80	-8	NS
	%	36,8	41,7	39,6	-4,9	NS	31,6	28,2	29,6	3,4	NS
Running	n	89	130	219	-41	NS	93	116	209	-23	NS
	%	78,1	83,3	81,1	-5,2	NS	81,6	74,4	77,4	7,2	NS
Hid and seek	n	71	91	162	-20	NS	68	96	164	-28	NS
	%	62,3	58,3	60	4	NS	59,6	61,5	60,7	-1,9	NS
Tag game	n	76	102	178	-26	NS	76	90	166	-14	NS
	%	66,7	65,4	65,9	1,3	NS	66,7	57,7	61,5	9	NS
Football	n	65	63	128	2	**	60	65	125	-5	NS
	%	57,0	40,4	47,4	16,6	0,007	52,6	41,7	46,3	10,9	NS
Dance	n	17	30	47	-13	NS	16	26	42	-10	NS
	%	14,9	19,2	17,4	-4,3	NS	14,0	16,7	15,6	-2,7	NS
Fights	n	16	47	63	-31	**	15	33	48	-18	NS
	%	14,0	30,1	23,3	-16,1	0,002	13,2	21,2	17,8	-8	NS
Fantasy games	n	33	43	76	-10	NS	19	21	40	-2	NS
	%	28,9	27,6	28,1	1,3	NS	16,7	13,5	14,8	3,2	NS
Marbles	n	5	8	13	-3	NS	3	1	4	2	NS

	%	4,4	5,1	4,8	-0,7		2,6	0,6	1,5	2	
Board and electronic games											
Listen to music	n	19	23	42	-4	NS	14	15	29	-1	NS
	%	16,7	14,7	15,6	2		12,3	9,6	10,7	2,7	
To converse	n	75	97	172	-22	NS	72	90	162	-18	NS
	%	65,8	62,2	63,7	3,6		63,2	57,7	60	5,5	
Design	n	26	35	61	-9	NS	16	22	38	-6	NS
	%	22,8	22,4	22,6	0,4		14,0	14,1	14,1	-0,1	
Games of chance	n	1	2	3	-1	NS	0	2	2	-2	NS
	%	0,9	1,3	1,1	-0,4		0	1,3	1,3	-1,3	
Checkers	n	5	11	16	-6	NS	1	2	3	-1	NS
	%	4,4	7,1	5,9	-2,7		0,9	1,3	1,1	-0,4	
Card game	n	19	13	32	6	*	20	24	44	-4	NS
	%	16,7	8,3	11,9	8,4	0,036	17,5	15,4	16,3	2,1	
Puzzle	n	2	8	10	-6	NS	2	2	4	0	NS
	%	1,8	5,1	3,7	-3,3		1,8	1,3	1,5	0,5	
Videogames	n	16	27	43	-11	NS	9	26	35	-17	*
	%	14,0	17,3	15,9	-3,3		7,9	16,7	13	-8,8	0,034
Others											
Others	n	36	38	74	-2	NS	11	10	21	1	NS
	%	31,6	24,4	27,4	7,2		9,6	6,4	7,8	3,2	

Legend: I.G. (Intervention Group), C.G. (Control Group); \*\*\*p≤0.001; \*\*p≤0.01; \*p≤0.05; NS – not significant. Source: own elaboration.

Table 3 shows that in the Intervention Group, the average number of games played across the three categories is higher than in the Control Group in both phases of the intervention. However, there was a decrease in the practice

of all three categories of games in both groups during in the Post-Intervention phase compared to the Pre-Intervention phase.

Table 3.

Diversity of games played in recess, by game category, in each group (I.G. and C.G.) in the Pre- and Post- Intervention phases

Games		Intervention Group (I.G.)			Control Group (C.G.)			
		Pre n=114	Post n=114	Total n=228	Pre n=156	Post n=156	Total n=312	
Movement games	n	473	435	908	617	523	1140	
	%	70,4	75,0	72,52	70,8	73,04	71,83	
Average of movement games played by children		$\bar{X}$	4,15	3,82	3,98	3,96	3,35	3,65
Board and electronic games	n	163	134	297	216	183	399	
	%	24,26	23,10	23,72	24,80	25,56	25,14	
Average of board and electronic games played by children		$\bar{X}$	1,43	1,18	1,30	1,38	1,17	1,28
Other games	n	36	11	47	38	10	48	
	%	5,36	1,90	3,75	4,36	1,40	3,02	
Average of other games played by children		$\bar{X}$	0,32	0,10	0,21	0,24	0,06	0,15
Total games played at recess	n	672	580	1252	871	716	1587	
	%	100,0	100,0	100,0	100,0	100,0	100,0	
Average of total games played at recess by children		$\bar{X}$	5,89	5,08	5,49	5,58	4,59	5,09

Legend: I.G. (Intervention Group), C.G. (Control Group); \*\*\*p≤0.001; \*\*p≤0.01; \*p≤0.05; NS – not significant. Source: own elaboration.

We highlight, from Table 4 that in the Control Group, the more intense movement games, such as “jumping rope” and “running”, show a significant decrease (p≤0.01 and p≤0.05 respectively) in practice between the Pre-Intervention phase and the Post-Intervention phase. In contrast, in

the Intervention Group, the practice of “jumping rope” slightly decreases, while the practice of “running” actually increases.

Table 4.

Diversity of games played in recess, by the two groups (I.G. and C.G.) in the Pre- and Post- Intervention phases, by game

Games		Intervention Group (I.G.)					Control Group (C.G.)				
		Pre n=114	Post n=114	Total n=228	Dif	p	Pre n=156	Post n=156	Total n=312	Dif	p
Movement games											
Elastic band	n	12	4	16	7	*	4	3	7	1	NS
	%	10,5	3,5	5,9	7,0	0,038	2,6	1,9	2,6	0,7	
Hopscotch	n	47	45	92	2	NS	34	28	62	6	NS
	%	41,2	39,5	34,1	1,7		21,8	17,9	23,0	3,9	
Jumping Rope	n	42	36	78	6	NS	65	44	109	21	**
	%	36,8	31,6	28,9	5,2		41,7	28,2	40,4	13,5	0,013
Running	n	89	93	182	-4	NS	130	116	246	14	*
	%	78,1	81,6	67,4	-3,5		83,3	74,4	91,1	8,9	0,052
Hide and seek	n	71	68	139	3	NS	91	96	187	-5	NS
	%	62,3	59,6	51,5	2,7		58,3	61,5	69,3	-3,2	
Tag game	n	76	76	152	0	NS	102	90	192	12	NS

	%	66,7	66,7	56,3	0,0		65,4	57,7	71,1	7,7
Football	n	65	60	125	5	NS	63	65	128	-2
	%	57,0	52,6	46,3	4,4		40,4	41,7	47,4	-1,3
Dance	n	17	16	33	1	NS	30	26	56	4
	%	14,9	14,0	12,2	0,9		19,2	16,7	20,7	2,5
Fight games	n	16	15	31	1	NS	47	33	80	14
	%	14	13,2	11,5	0,8		30,1	21,2	29,6	8,9
Fantasy games	n	33	19	52	14	*	43	21	64	22
	%	28,9	16,7	19,3	12,2		0,027	27,6	13,5	23,7
Marbles	n	5	3	8	2	NS	8	1	9	7
	%	4,4	2,6	3,0	1,8		5,1	0,6	3,3	4,5
Board and electronic games										
Listen to music	n	19	14	33	5	NS	23	15	38	8
	%	16,7	12,3	12,2	4,4		14,7	9,6	14,1	5,1
To converse	n	75	72	147	3	NS	97	90	187	7
	%	65,8	63,2	54,4	2,6		62,2	57,7	69,3	4,5
Design	n	26	16	42	10	NS	35	22	57	13
	%	22,8	14,0	15,6	8,8		22,4	14,1	21,2	8,3
Games of chance	n	1	0	1	1	NS	2	2	4	0
	%	0,9	0,0	0,4	0,9		1,3	1,3	1,5	0,0
Checkers	n	5	1	6	4	NS	11	2	13	9
	%	4,4	0,9	2,2	3,5		7,1	1,3	4,8	5,8
Card game	n	19	20	39	-1	NS	13	24	37	-11
	%	16,7	17,5	14,4	-0,8		8,3	15,4	13,7	-7,1
Puzzle	n	2	2	4	0	NS	8	2	10	6
	%	1,8	1,8	1,5	0,0		5,1	1,3	3,7	3,8
Videogames	n	16	9	25	7	NS	27	26	53	1
	%	14,0	7,9	9,3	6,1		17,3	16,7	19,6	0,6
Others										
Others	n	36	11	47	25	***	38	10	48	28
	%	31,6	9,6	17,4	22,0		0,000	24,4	6,4	17,8

Legend: I.G. (Intervention Group), C.G. (Control Group); \*\*\* $p \leq 0.001$ ; \*\* $p \leq 0.01$ ; \* $p \leq 0.05$ ; NS – not significant. Source: own elaboration.

It should be noted that, in both groups, “fantasy games” registered a significant decrease between the two phases of the intervention. Additionally, the “others” category showed significant differences ( $p \leq 0.001$ ) between the Pre- and Post- Intervention phases in both groups (Intervention and Control Group). This suggests that over time, children tend to reduce the variety of games played at recess. This finding reinforces the potential of interventions that introduce new games during recess in elementary schools, not

only, encourage physical activity throughout the school year but also to increase the diversity of games played in recess, thereby expanding children’s motor vocabulary.

Table 5 shows the homogeneity between the Control and Intervention Groups at the initial phase of the study concerning interactions between peers, as there are no significant differences in the studied categories during the Pre-Intervention phase.

Table 5. Interactions between peers at recess in the Pre- and Post- Intervention phases

Interactions	Pre-Intervention Phase				Post-Intervention Phase				
		I.G.	C.G.	Total n=193	p	I.G.	C.G.	Total n=194	p
Nobody	n	0	2	2	NS	1	2	3	NS
	%	0,0	1,8	1,0		1,2	1,8	1,5	
Class girls	n	20	38	58	NS	18	39	57	*0,029
	%	23,3	34,2	30,1		20,9	35,1	29,4	
Class boys	n	33	38	71	NS	27	39	66	NS
	%	38,4	34,2	36,8		31,4	35,1	34,0	
Class boys and girls	n	24	21	45	NS	32	18	50	**0,001
	%	27,9	18,9	23,3		37,2	16,2	25,8	
Boys and girls from other classes	n	8	9	17	NS	10	8	18	NS
	%	9,3	8,1	8,8		11,6	7,2	9,3	
Total	n	85	108	193		88	106	194	
	%	100,0	100,0	100,0		100,0	100,0	100,0	

Legend: I.G. (Intervention Group), C.G. (Control Group); \*\*\* $p \leq 0.001$ ; \*\* $p \leq 0.01$ ; \* $p \leq 0.05$ ; NS – not significant. Source: own elaboration.

Regarding the Post-Intervention phase, it is important to note the significant differences between the two groups studied concerning interactions between the “class girls” (intragender interactions) and the interactions between “class boys and girls” (intergender interactions). In the Control Group interactions among “class girls” were more frequent than in the Intervention Group, with significant

differences between the two groups ( $p \leq 0.05$ ). As for the interactions between “class boys and girls” were more frequent in the Intervention Group with significant differences between the two groups ( $p \leq 0.001$ ).

Table 6 shows that there are no significant differences between the two phases of the intervention, in either the Intervention Group or the Control Group. However, it

should be noted that in the Intervention Group, there was a decrease in intragender interactions, “class boys and girls” and interactions among “boys and girls from other classes”. In the Control Group, no significant differences were registered between the two intervention phases, however

some changes were observed in the opposite direction compared to the Intervention Group. Specifically, intragender interactions slightly increase and intergender interactions slightly decreased.

Table 6.

Interactions between peers at recess in the groups studied in the Pre- and Post- Intervention phases

Interactions		Intervention Group (I.G.)				Control Group (C.G.)			
		Pre	Post	Total n=173	p	Pre	Post	Total n=214	p
Nobody	n	0	1	1	NS	2	2	4	NS
	%	0,0	1,2	0,6		1,8	1,8	1,9	
Class girls	n	20	18	38	NS	38	39	77	NS
	%	23,3	20,9	22,0		34,2	35,1	36,0	
Class boys	n	33	27	60	NS	38	39	77	NS
	%	38,4	31,4	34,7		34,2	35,1	36,0	
Class boys and girls	n	24	33	57	NS	21	18	39	NS
	%	27,9	37,2	33,0		18,4	16,2	18,2	
Boys and girls from other classes	n	8	9	17	NS	9	8	17	NS
	%	9,3	11,6	9,8		8,1	7,2	7,9	
Total	n	85	88	173		108	106	214	
	%	100,0	100,0	100,0		100,0	100,0	100,0	

Legend: I.G. (Intervention Group), C.G. (Control Group); \*\*\* $p \leq 0.001$ ; \*\* $p \leq 0.01$ ; \* $p \leq 0.05$ ; NS – not significant. Source: own elaboration.

## Discussion

This study aimed to determine the effects of an intervention on the diversity of games played during school recess and on the interactions of children with their peers.

According to Bodrova and Leong (2005), there is a strong connection between play and the development of children's social skills. This connection is also evident in our study, where the intervention involving the introduction of new games during school recess led changes in children's social behavior, particularly an increase in interactions between mixed-gender groups.

During the intervention, children played with peers they did not usually interact with. Most children considered interactions enjoyable, others mentioned that they met new peers, and a minority mentioned that they appreciated these interactions because they felt included in the games. Previous studies have found that some children dislike recess due to peer rejection (Mairal-Llebot et al., 2022; Pereira, 2008; Pereira et al., 2009). In this context, the introduction and facilitation of games during school recess, with a clear pedagogical intention, can here be preponderant factors for improving the well-being of all students (Farenzena et al., 2012).

Children typically engage in games that are enjoyable, imaginative, and socially interactive (Angulo et al., 2022). In this way, we believe that the intervention achieved its objective as most children participated voluntarily in the intervention, motivated by the fact that the games were interesting and fun, and provided an opportunity to learn new games with peers. Legitimately, children who did not participate in the intervention justified it, stating that they prefer to play with their friends, because recess provides opportunities to develop friendships and social skills (Ramstetter et al., 2010). Landrau et al. (1997) conducted a project that highlighted the conditions under which most children are developing, demonstrating that

what most characterizes it is the lack of movement. They also point out that children are exploring their environment less and less autonomously; and in their experiences, television and computer games stand out, that is, simulated worlds, noting the lack of lived experiences. This is leading the child to a loss of sensory perception and movement. However, our study found that children engaged more involved in movement games than in electronic and board games, even reducing their practice of the latter in favor of increased participation in movement games. Hence, we consider this as one of the positive effects of the intervention implemented. Serra & Serra (2007) also confirmed that over time (1997-2007), children increased their engagement in locomotor games, revealing that children engage in highly active practices during recess.

We believe that this type of intervention is urgently needed to encourage the practice of various games during school recess and, at the same time, create conditions for children to play their games safely and with pleasure. As we know, currently, recess is the time when children can engage freely in their activities and these moments are a fantastic opportunity for children to discover new activities that give them pleasure and motivate them to be active (Stellino et al., 2010). Children need movement and enjoy it, however, as Levin (2012) confirms, it is necessary to understand the best way to promote play among children, as its absence or reduction can have disastrous consequences in their development.

In this context, there are certain limitations in our study that need to be highlighted: 1) the time and activities conducted outside the school context were not considered, which may influence the study's results, although not in a decisive way; 2) the participants in this study were drawn from only two primary schools in the northern of Portugal, and in future research, it's suggested to expand the number of schools and, consequently, the sample size to ensure that the study is more representative of the population analyzed.

## Conclusions

There was an increase in the practice of activities and a greater diversity of games (particularly movement games), especially among girls, which also led to an increase in peer interactions (especially intergender ones). An intervention that introduces new games during recess in elementary schools can serve, not only as an incentive to engage in physical activities throughout the school year but can also contribute to increase the diversity of games practiced in recess, thereby expanding children's motor vocabulary.

The intervention was effective in changing some behaviors related to the diversity of interactions among children during school recess. It is important for children to develop social skills, not only with children of the same sex, but also with those of the opposite sex, as they grow up in an integrated world. Sooner, they develop the skills needed to interact with the opposite sex, the more readily they will adapt to coexisting and interacting with different genders when required.

## References

- Álvarez, M. E. (2022). La escuela y los valores en un mundo globalizado. *Opción: Revista de Ciencias Humanas y Sociales*, 98, 83-94.
- Angulo, I., Vizcarra, M. T., Gamito, R., & López-Vélez, A. L. (2022). ¿Cómo hacer más coeducativos los patios de recreo? Una propuesta de aprendizaje-servicio. *RIDAS*, 13, 60-79. <http://dx.doi.org/10.1344/ridas2022.13.4>
- Baptista, I. (2016). *Metodología de pesquisa em ciências sociais*. Maputo: Escolar Editora.
- Bodrova, E., & Leong, D. (2005). The importance of play: why children need play. *Early Childhood Today*, 20, 6-7.
- Cano Moya, J. L., Isaza-Gómez, G. D., & Valencia Guzmán, J. D. (2023). El juego como estrategia didáctica para la construcción de habilidades sociales en los niños de la comuna 20 de la ciudad de Cali. *Retos*, 48, 261-170. Recuperado a partir de <https://recyt.fecyt.es/index.php/retos/article/view/96989>
- Creswell, J. W., & Plano Clark, V. L. (2017). *Designing and conducting mixed methods research*. Thousand Oaks, CA: Sage Publications.
- Farenzena, R., Costa, P., Pereira, V., & Pereira, B. (2012). Bullying escolar: descrição de um projeto de intervenção. In B. Pereira, A. Silva, & G. Carvalho (eds.), *Atividade física, saúde e lazer. O valor formativo do jogo e da brincadeira* (pp. 119-127). Braga: Centro de Estudos da Criança da Universidade do Minho. <http://dx.doi.org/10.46898/rfb.9786558896869.7>
- Faustinelli, M. (2022). Aportes para pensar una educación en valores. *Diálogos Pedagógicos*, 20(39), 180-193. [http://dx.doi.org/10.22529/dp.2022.20\(39\)11](http://dx.doi.org/10.22529/dp.2022.20(39)11)
- Fructuoso, M.R. (2016). El patio de recreo, un espacio de desigualdad entre niños y niñas. *Publicaciones Didácticas*, 74, 617-632.
- Gallardo-López, J.A., & Gallardo-Vázquez, P. (2018). Teorías sobre el juego y su importancia como recurso educativo para el Desarrollo integral infantil. *Revista Educativa Hekademos*, 24, 41-51. <http://dx.doi.org/10.21556/edutec.2010.33.431>
- Gomes, P., Marques, A. I., & Nunes, M. (2003). Comparação de opiniões de raparigas e de rapazes de Viseu e do Território de Macau, quanto ao género de jogos dos recreio escolar. *Lecturas: Educación Física y Deportes*, 63, p. 7. <http://dx.doi.org/10.46642/efd.v26i276.2388>
- González-Plate, L. I., Rivera García, E., & Trigueros Cervantes, C. (2022). El recreo escolar un espacio de juego, comunicación y transmisión cultural. *Retos*, 45, 1188-1198. <http://dx.doi.org/10.47197/retos.v45i0.91871>
- Hellín-Martínez, M., García-Jiménez, J. V., García-Pellicer, J. J., & Alfonso-Asencio, M. (2022). Heart rate and physical activity levels during school recess. A descriptive study. *Retos*, 43, 422-427. <http://dx.doi.org/10.47197/retos.v43i0.88648>
- Landrau, G., Hildebrad, R., Faustino, A., Mesquita, H., & Serrano, J. (1997). Estudio sobre a vida de movimento de crianças de Castelo Branco. *Revista da Escola Superior de Educação de Castelo Branco*, 2, 115-122. <http://dx.doi.org/10.33425/2690-8077.1049>
- Levin, D. (2012). Changing times, changing play: why does it matter? *Exchange, s/n*, 58-62.
- Luis, M. I., Torre, T., Escolar-Llamazares, M. C., Ruiz, E., Huelmo, J., Palmero, C., & Jiménez, A. (2020). Influencia del género en la aceptación o rechazo entre iguales en el recreo. *Revista de Educación*, 387, 89-115. <http://dx.doi.org/10.18172/con.3937>
- Magalhães, M., & Hill, A. (2016). *Investigação por questionário*. Lisboa: Edições Sílabo.
- Mairal-Llebot, M., Liesa Orús, M., & Latorre Cosculluela, C. (2022). El juego cooperativo e inclusivo en los recreos como impulsor del desarrollo de habilidades sociales en la infancia. *Diálogos Pedagógicos*, 20(40), 149-162. [http://dx.doi.org/10.22529/dp.2022.20\(40\)09](http://dx.doi.org/10.22529/dp.2022.20(40)09)
- Massey, W. V., Stellino, M. B., Claassen, J., & Wilkison, M. (2018). Development of the great recess framework-observational tool to measure contextual and behavioral components of elementary school recess. *BMC Public Health*, 18, 394-405. <http://dx.doi.org/10.1186/s12889-018-5295-y>
- Mellado-Rubio, R., Devís-Devís, J., & Valencia-Peris, A. (2023). Physical activity in elementary school children: compliance with recommendations and the contribution of the school recess. *Retos*, 48, 366-373. <http://dx.doi.org/10.47197/retos.v48.96437>
- Pastor-Vicedo, J. C., Martínez-Martínez, J., López-Polo, M., & Prieto-Ayuso, A. (2021). Active recess as a strategy to promote physical activity: a systematic review. *Retos*, 40, 135-144. <http://dx.doi.org/10.47197/retos.v1i40.82102>

- Pereira, B. (2008). *Para uma escola sem violência. Estudo e prevenção das práticas agressivas entre crianças*. Lisboa: Fundação Calouste Gulbenkian e Ministério da Ciência e Tecnologia (MCT).
- Pereira, B., & Neto, C. A. (1997). Infância e as práticas lúdicas. Estudo das atividades de tempos livres nas crianças dos 3 aos 10 anos. In M. Pinto, & M. J. Sarmiento (eds.), *As crianças: contextos e identidades* (pp. 219-264). Braga: Centro de Estudos da Criança da Universidade do Minho. <http://dx.doi.org/10.51366/978-65-89468-00-4-coordinancia-32>
- Pereira, B., Silva, M., & Nunes, B. (2009). Descrever o bullying na escola: estudo de um agrupamento de escolas no interior de Portugal. *Revista Diálogo Educacional*, 9, 455-466. <http://dx.doi.org/10.7213/rde.v9i28.3169>
- Ramstetter, C., Murray, R., & Garner, A. (2010). The crucial role of recess in schools. *J Sch Health*, 80, 517-526. <http://dx.doi.org/10.1111/j.1746-1561.2010.00537.x>
- Rodríguez-Fernández, J. E., Pereira, V., Condessa, I., & Pereira, B. (2020a). Valor atribuido al recreo escolar por el alumnado de 1º ciclo de enseñanza básica en Portugal. *Retos*, 38, 188-195. <http://dx.doi.org/10.47197/retos.v38i38.73784>
- Rodríguez-Fernández, J. E., Pereira, V., Condessa, I., & Pereira, B. (2020b). Avaliação de um programa de intervenção em escolas: aprender através do jogo. *Revista Portuguesa de Educação*, 33(1), 54-76. <http://dx.doi.org/10.21814/rpe.18349>
- Rodríguez-Fernández, J.E., Pereira, V., Pereira, B., & Condessa, I. (2019). Análisis de la interacción entre pares en los recreos de 1º ciclo de enseñanza básica en Portugal. *Retos*, 36, 97-102. <http://dx.doi.org/10.47197/retos.v36i36.68566>
- Rodríguez-Rodríguez, F., Molina Roblero, S., & Moraes Ferrari, G. L. (2021). Organized recess as a strategy to improve physical activity levels and physical condition in adolescents. *Retos*, 39, 403-410. <http://dx.doi.org/10.47197/retos.v0i39.78534>
- Salas Sánchez, M. I., & Vidal Conti, J. (2022). Intervenciones en patios escolares para aumentar la actividad física. Revisión sistemática. *Sport TK-Revista EuroAmericana de Ciencias del Deporte*, 11, 30. <http://dx.doi.org/10.6018/sportk.490251>
- Serra, C., & Serra, N. (2007). Atividades lúdico-motoras praticadas em meio rural por crianças do 1º ciclo do EB. Mudanças verificadas entre 1992 e 2007. *ESEG Investigação, Revista científica da Escola Superior de Educação da Guarda*, 1, 149-168. <http://dx.doi.org/10.46691/es.vi.211>
- Stellino, M. B., Sinclair, C. D., Partridge, J. A., & King, K. M. (2010). Differences in children's recess physical activity: recess activity of the week intervention. *J Sch Health*, 80, 436-444. <http://dx.doi.org/10.1111/j.1746-1561.2010.00525.x>

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