INTENSITY IN THE SUBJECTIVE EMOTIONAL EXPERIENCE FROM A GENDER PERSPECTIVE IN SOCIO-MOTOR SITUATIONS AND DIFFERENT ENVIRONMENT IN PRIMARY PHYSICAL EDUCATION

INTENSIDAD EN LA VIVENCIA EMOCIONAL SUBJETIVA DESDE LA PERSPECTIVA DE GÉNERO EN SITUACIONES SOCIOMOTRICES Y DIFERENTES MEDIOS EN EDUCACIÓN FÍSICA EN PRIMARIA

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Intensity in the Subjective Emotional Experience in Primary in Physical Education

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Abstract

The aim of this study was to analyze the intensity of the subjective emotional experience, from a gender perspective, in motor games played in terrestrial and aquatic environments, in socio-motor situations, in Physical Education sessions in Primary Education. The design was descriptive with a post-test, combining quantitative and qualitative methodology, in a natural context. The pupils were chosen by non-probabilistic sampling for ease of access and intentionality, respecting the ecology in the distribution of the participants in each group-class: 16 students (10 girls, 62.5%, *M* = 11.4 years, *SD* = 0.48; 6 boys, 37.5%, *M* = 11.33 years, *SD* = 0.47). Data were collected using the Games and Emotions Scale for Children (GES-C) (Alcaraz-Muñoz et al., 2022) and the Pictorial Children's Effort Rating Table based on the scale by Williams et al. (1994) and validated with children by Yelling et al. (2002). The results show the dominance of positive emotions in the three socio-motor domains and environments, with the exception of the collaboration with opposition in the terrestrial environment, with equal positive and negative emotions. In addition, the percentage of dominant negative emotions is higher in boys in both environments. It is concluded that teachers have the possibility of triggering emotions in their pupils, and especially positive ones, by carrying out an emotional Physical Education, which does not have to be based solely on competition; and not only in terrestrial environment, but also in the aquatic environment.

Keywords: Emotions, terrestrial environment, aquatic environment, features.

Resumen

El objetivo de este estudio fue analizar la intensidad en la vivencia emocional subjetiva, desde la perspectiva de género, en los juegos motores realizados en el medio terrestre y en el medio acuático, en situaciones sociomotrices, en las sesiones de Educación Física en Educación Primaria. El diseño fue descriptivo con postest, combinando metodología cuantitativa y cualitativa, en un contexto natural. Los participantes fueron elegidos por muestreo no probabilístico por facilidad de acceso e intencionalidad, respetando la ecología en la distribución de los participantes en cada grupo-clase: 16 alumnos (10 niñas, 62.5%, *M* = 11.4 años, *SD* = 0.48; 6 niños, 37.5%, *M* = 11.33 años, *SD* = 0.47). La recogida de los datos fue mediante la Games and Emotions Scale for Children (GES-C) (Alcaraz-Muñoz et al., 2022) y el Pictorial Children's Effort Rating Table basada en la escala de Williams et al. (1994) y validada con niños por Yelling et al. (2002). En los resultados se aprecia la dominancia de las emociones positivas en los tres dominios sociomotrices y medios, a excepción del de colaboración con oposición en el medio terrestre, con emociones positivas y negativas igualadas. Además, el porcentaje de emociones dominantes negativas es superior en niños en ambos medios. Se concluye que el profesorado tiene la posibilidad de desencadenar emociones en el alumnado, y sobre todo positivas, de llevar a cabo una Educación Física emocional, que no tiene por qué estar basada únicamente en la competición; y no solo en el medio terrestre, sino también en el medio acuático.

Palabras clave: Emociones, medio terrestre, medio acuático, rasgos.

Introduction

Physical Education (PE) according to Parlebas (2001) is the "pedagogy of motor behavior" (p. 172), in which "it is possible to educate and influence the different dimensions of students" (Lagardera, 2007, p. 93). Motor behavior is understood as the way of responding with motor actions in the framework of a motor situation, the result of linking personal experience with the features and demands of the internal logic (IL) of the rule of this (Parlebas, 2001). The Theory of Motor Action (Parlebas, 2001) classifies motor learning situations into two categories: psychomotor and socio-motor. The first corresponds to the psychomotor domain of motor action, in which there is no interaction with other participants. Within the second category, three domains of motor action can be distinguished: cooperation, in which there is mutually supportive interaction between participants; opposition, where motor interaction is antagonistic between participants; and cooperation with opposition, involving motor interaction that establishes relationships of solidarity and cooperation, with the aim of overcoming opponents. When pupils take part in any motor game, they engage their entire personality in a holistic manner, systematically activating the physical, cognitive, relational and affective or emotional dimensions of their motor behavior (Lagardera & Lavega, 2003). Thus, the key to effective teaching lies in observing pupils' behavior, with a view to deciding on and proposing the most suitable situations that will elicit the desired behaviors in them (Lagardera & Lavega, 2003). If motor behavior and emotion cannot be separated from one another, as Parlebas (2001) has already pointed out, PE and emotional education go hand in hand, since, in this process of emotional education or literacy, motor activities can be enriching and fundamental.

Gender is an important variable in the emotional experience within the field of physical education. Examples of this include studies (Alcaraz-Muñoz et al., 2017; Alonso et al., 2012, 2019; Gea-García et al., 2017; Jaqueira et al., 2014; Lavega, Lagardera, et al., 2014; Lavega et al., 2017), which analyze these aspects across all educational stages, across different domains of motor action, and in relation to competitive and traditional games. There is no record of any studies comparing emotions evoked graphically and verbally between and by different motor games across the various domains of motor action in terrestrial environment (TE) and aquatic environment (AE).

Four questions therefore arise: 1) What is the most intense emotion that pupils report feeling, depending on the motor skill domain and the setting in which they take part in the motor games in question? 2) Does the intensity of the subjective emotional experience expressed graphically and verbally correspond to that expressed quantitatively? 3) Which elements of the games underlie the students' justification for the intensity of their subjective emotional experience? 4) Are there any differences based on gender?

That is why the aim of this study was to analyze the intensity of subjective emotional experience, from a gender perspective, in motor games carried out on land and in water, in socio-motor situations, during Physical Education lessons in primary education.

Material and Methods

Design and Variables

This study employed a cross-sectional, descriptive design with a post-test, combining quantitative and qualitative methodology. The variables under investigation were: a) emotions: affect, joy, happiness, humor, anger, fear, rejection, sadness, and shame; b) socio-motor domains (Parlebas, 2001); c) terrestrial environment; and d) aquatic environment.

Participants

The participants were 16 Year 6 primary school pupils from a state-subsidized school in the Region of Murcia, Spain. There were 6 boys (37.5%, *M* = 11.33 years, *SD* = 0.47) and 10 girls (62.5%, *M* = 11.4 years, *SD* = 0.48) aged between 11 and 12. All had been at the school since the first year of pre-primary education, and had therefore attended the same physical education sessions, both in the morning and in the afternoon. The pupils were selected using non-probabilistic sampling based on ease of access and purposive selection, whilst ensuring that the distribution of participants across each class group reflected the natural school environment.

Instruments

Data on the emotions experienced by the participants were collected at the end of each session using the Games and Emotions Scale for Children (GES-C) (Alcaraz-Muñoz et al., 2022).

Procedure

Following the positive assessment by the University of Murcia's Research Ethics Committee (ID: 2214/2018), a meeting was requested with the Committee's executive board. Once the school management and the primary school PE teacher had given their approval, the pupils' parents were invited to a voluntary meeting. The study to be carried out was presented to them and, on a voluntary basis, those interested signed the informed consent form. The PE teacher incorporated the programme into their teaching plan exactly as it had been designed.

Prior to the intervention, the pupils attended a session on the meaning of emotions and how they should respond to the instruments. A week later, the six sessions of the programme began. The motor skills domains and activities, presented in chronological order, were: a) land-based collaborative socio-motor skills (such as cooperative games with parachutes); b) water-based collaborative socio-motor skills (such as cooperative games with balloons in a shallow pool); c) land-based competitive socio-motor skills (such as the 'hot hands' game and 'steal the tails' in pairs); d) aquatic socio-motor skills involving opposition (such as 'steal the ball' in pairs in the pool); e) land-based collaborative socio-motor skills involving opposition (such as the 'ten passes' game); and f) aquatic collaborative socio-motor skills involving opposition (such as the 'ten passes' game in a deep pool). All the sessions were led by the researcher, who stuck to the proposed activities without offering any feedback, and only answered questions regarding the tasks set before the sessions began. The PE teacher was present but never intervened.

Following the reliability analysis for the scale, Cronbach's alpha coefficient of .478 was obtained. Due to this low reliability, a specific item (sadness) was excluded, resulting in a coefficient of .777. It was then found that the Kaiser–Meyer–Olkin (KMO = .777) measure of sample adequacy and Bartlett's sphericity test ($p < .001$) confirmed that the data met the necessary conditions for conducting exploratory factor analysis.

Exploratory principal component analysis indicated the extraction of three factors. To determine the factor loadings such that the correlation between the variable and the factor was significant, the guidelines set out by Hair et al. (2010) and Beavers et al. (2013) were followed, depending on the sample size used for the analysis. The exploratory factor analysis of the GES-C revealed three factors that explain 61.75% of the total variance generated by all the items comprising the scale. These three factors are defined as Positive Emotions (Component 1), Negative Emotions I (Component 2) and Negative Emotions II (Component 3). Similarly, a reliability analysis of the scale was carried out, yielding Cronbach's alpha reliability coefficient of .777, confirming adequate internal consistency.

In turn, qualitative data were collected through drawings and subjective comments. Immediately after each session, the pupils were asked to express themselves individually, both in writing and through drawings. The instructions given are summarized as follows: "Circle the emotion you felt most strongly during this session and explain why" and "Draw what you liked most about the session." This was done on the reverse side of the GES-C scale, with no time limit, with students sitting apart from one another and each provided with paper, a black pencil and colored pencils.

The drawings were scanned and the pupils' comments were transcribed. Two PhD holders in Physical Activity and Sport Sciences, who are experts in this methodology, analyzed them. To avoid misinterpretations and/or loss of information, the plan for each session was taken into account and, although analyzed separately, the comments and drawings were viewed together.

The analytical guidelines based on Motor Praxiology (Parlebas, 2001) were followed, as set out in previous studies (Alcaraz-Muñoz et al., 2017; Lavega, Alonso, et al., 2014; Lavega, Lagardera, et al., 2014; Mowling et al., 2006; Sáez de Ocáriz, Lavega, Lagardera, et al., 2014) relating to research on the Sports Education Model, to code the drawings and comments according to the presence or absence of terms or graphical representations associated with features of IL and/or external logic (EL), as described in Table 1, in a Microsoft Excel file, all based on an understanding of the various domains of motor action.

Table 1

Categories of IL and EL (Modified From Alcaraz-Muñoz et al., 2017)

	Categories	Description
IL	Rules	Specific features of the game
	Time	Events occurring during the game or about the competition, if any
	Space	Spatial references of the field of play and on the body positions and postures of the players
	Relation	Type of motor relationship between participants
	Material	Use of the material to participate
EL	Time	Characteristics of chronological time, life stages
	Space	Pitch maintenance conditions and weather aspects
	Material	Basic components of the play material or colour
	Relation	Permanent personal attributes of players
	Persons	Traits and transitory circumstances of individuals

The two PhDs conducted their coding independently, and after a subsequent comparative analysis, the discrepancies were discussed, reaching an agreement and arguing consensus (MacPhail & Kinchin, 2004). Subsequently, the percentage of each of the categories was calculated (Méndez-Giménez & Martínez de Ojeda, 2017). Finally, the existence of consistencies and inconsistencies with quantitative data and analysis was explored (Gutiérrez-Díaz del Campo et al., 2014).

The deontological standards recognized by the Declaration of Helsinki (World Medical Association [WMA], 2024), the recommendations of Good Clinical Practice of the EEC (document 111/3976/88 of July 1990) and the current Spanish legal regulations governing clinical research on humans (Real Decreto 1090/2015, 2015, on 4 December on clinical trials) were followed.

The personal data of all participants were protected and included in a file subject to and with the guarantees of the law 15/1999 of 13 December on the protection of personal data.

Statistics

For data analysis, IBM SPSS Statistics (Version 24.0; IBM Corp., 2016) was used to perform descriptive statistics (frequencies and percentages) to analyze the dominant emotions and the elements of IL and EL present in comments and drawings, without carrying out inferential statistical analyses.

Results

The data obtained from the analysis of the intensity of the subjective emotional experience, through drawings and comments, from a gender perspective and considering domains and media, are presented below.

Table 2 shows whether the dominant emotions in each domain and medium are positive or negative, as well as the percentage distribution by gender. In all domains and environments, the dominant emotions are positive, except in the socio-motor domain of collaboration with opposition in the TE, in which the percentages of both emotions are equal (43.75%). In the socio-motor domain of collaboration, the dominant emotions are also positive, with no negative dominant emotions appearing in any medium. In the case of the oppositional socio-motor domain, positive and negative dominant emotions do appear, with a higher percentage of the former in the TE (93.75%) compared to the AE (50%). The percentage of negative dominant emotions is higher in boys in both environments. The socio-motor domain of collaboration with opposition also shows the appearance of positive and negative dominant emotions, with a higher percentage of negative ones in the TE. The percentage of negative dominant emotions is higher in boys in both environments, highlighting that in the AE all the girls express a positive dominant emotion.

Table 3 shows the percentages of the specific dominant emotions, showing that the dominant emotions are mostly the positive emotions of joy in the socio-motor domain with aquatic opposition (31.25%); and of humor in the socio-motor domain of terrestrial collaboration (43.75%) and aquatic (50%) and in the socio-motor domain with terrestrial opposition (68.75%). In the two sessions of the collaboration-with-opposition domains, the percentages of dominant positive and negative emotions expressed are similar, at 25% for both joy and anger.

Table 2

Percentage of Dominant Emotions (Positive vs. Negative)

	Terrestrial collaborative socio-motor			Aquatic collaborative socio-motor		
	%	Boys (%)	Girls (%)	%	Boys (%)	Girls (%)
Positive	75.00	31.25	43.75	87.50	31.25	56.25
Negative	0.00	0.00	0.00	0.00	0.00	0.00
DK/NA	25.00	6.25	18.75	12.50	6.25	6.25
	Terrestrial oppositional socio-motor			Aquatic oppositional socio-motor		
	%	Boys (%)	Girls (%)	%	Boys (%)	Girls (%)
Positive	93.75	31.25	62.50	50.00	12.50	37.50
Negative	6.25	6.25	0.00	25.00	18.75	6.25
DK/NA	0.00	0.00	0.00	25.00	6.25	18.75
	Terrestrial oppositional collaborative socio-motor			Aquatic oppositional collaborative socio-motor		
	%	Boys (%)	Girls (%)	%	Boys (%)	Girls (%)
Positive	43.75	0.00	43.75	50.00	0.00	50.00
Negative	43.75	31.25	12.50	25.00	25.00	0.00
DK/NA	12.50	6.25	6.25	25.00	12.50	12.50

Note. DK/NA = don't know/no answer.

Table 3

Percentage of Specific Dominant Emotions

	Terrestrial collaborative socio-motor			Aquatic collaborative socio-motor		
	%	Boys (%)	Girls (%)	%	Boys (%)	Girls (%)
+Joy	18.75	12.50	6.25	12.50	6.25	6.25
+Happiness	12.50	0.00	12.50	25.00	6.25	18.75
+Humor	43.75	18.75	25.00	50.00	18.75	31.25
DK/NA	25.00	6.25	18.75	12.50	6.25	6.25
	Terrestrial oppositional socio-motor			Aquatic oppositional socio-motor		
	%	Boys (%)	Girls (%)	%	Boys (%)	Girls (%)
+Joy	12.50	6.25	6.25	31.25	6.25	25.00
+Happiness	12.50	0.00	12.50	12.50	6.25	6.25
+Humor	68.75	25.00	43.75	6.25	0.00	6.25
DK/NA	0.00	0.00	0.00	37.50	18.75	18.75
	Terrestrial oppositional collaborative socio-motor			Aquatic oppositional collaborative socio-motor		
	%	Boys (%)	Girls (%)	%	Boys (%)	Girls (%)
+Joy	25.00	0.00	25.00	25.00	0.00	25.00
+Happiness	6.25	0.00	6.25	18.75	0.00	18.75
+Humor	12.50	0.00	12.50	6.25	0.00	6.25
-Anger	25.00	18.75	6.25	25.00	25.00	0.00
-Rejection	12.50	6.25	6.25			
DK/NA	18.75	12.50	6.25	25.00	12.50	12.50

Note. DK/NA = don't know/no answer.

Considering the gender perspective, in the socio-motor domain of collaboration, in both environments the dominant emotion in both boys and girls was humor. In the socio-motor domain with opposition, in the TE, humor was the dominant emotion in both boys and girls; however, in the AE in girls it was joy (25%), while in boys joy and affection were equally expressed (6.25%). In the socio-motor domain of collaboration with opposition, the girls agglutinated positive emotions, among which joy was predominant in both environments (25%); while the boys showed only negative emotions, especially anger (18.75% and 25%, respectively in both environments).

In Table 4, the pupils' drawings predominantly featured a combination of IL and EL elements across all domains and media, except in the socio-motor domain of collaboration in the TE, where they referred to both IL on its own and the IL + EL combination in equal proportions. By gender, girls' drawings consistently featured more combined elements of both logics.

Table 4

Percentage Presence of IL and EL in Subjective Experience in Drawings

		Terrestrial collaborative socio-motor			Aquatic collaborative socio-motor	
	%	Boys (%)	Girls (%)	%	Boys (%)	Girls (%)
IL	37.50	18.75	18.75	25.00	25.00	0.00
EL	0.00	0.00	0.00	0.00	0.00	0.00
IL+EL	37.50	12.50	25.00	62.50	6.25	56.25
DK/NA	25.00	6.25	18.75	12.50	6.25	6.25
		Terrestrial oppositional socio-motor			Aquatic oppositional socio-motor	
	%	Boys (%)	Girls (%)	%	Boys (%)	Girls (%)
IL	18.75	18.75	0.00	18.75	6.25	12.50
EL	0.00	0.00	0.00	0.00	0.00	0.00
IL+EL	81.25	18.75	62.50	31.25	6.25	25.00
DK/NA	0.00	0.00	0.00	25.00	18.75	6.25
		Terrestrial oppositional collaborative socio-motor			Aquatic oppositional collaborative socio-motor	
	%	Boys (%)	Girls (%)	%	Boys (%)	Girls (%)
IL	18.75	6.25	12.50	0.00	0.00	0.00
EL	18.75	6.25	12.50	6.25	6.25	0.00
IL+EL	25.00	0.00	25.00	43.75	0.00	43.75
DK/NA	37.50	25.00	12.50	50.00	31.24	18.75

Note. DK/NA = don't know/no answer.

As shown in Table 5, the pupils' comments mainly referred to EL in five of the six sessions. Only in the socio-motor domain of collaboration in the AE did references to a combination of IL and EL elements predominate. By gender, girls' comments showed more elements of EL in the socio-motor domain of opposition in the TE and in the domain of collaboration

with opposition in both environments; it is only in the socio-motor domain of collaboration in the AE that the majority of references relate to the IL + EL combination, whilst in the remaining domains there is a balance in the percentages.

Table 5

Percentage Presence of IL and EL in Subjective Experience in Comments

	Terrestrial collaborative socio-motor			Aquatic collaborative socio-motor		
	%	Boys (%)	Girls (%)	%	Boys (%)	Girls (%)
IL	18.75	6.25	12.50	12.50	12.50	0.00
EL	25.00	6.25	18.75	25.00	6.25	18.75
IL+EL	31.25	12.50	18.75	50.00	12.50	37.50
DK/NA	25.00	6.25	18.75	12.50	6.25	6.25
	Terrestrial oppositional socio-motor			Aquatic oppositional socio-motor		
	%	Boys (%)	Girls (%)	%	Boys (%)	Girls (%)
IL	37.50	18.75	18.75	12.50	12.50	0.00
EL	43.75	12.50	31.25	37.50	18.75	18.75
IL+EL	18.75	6.25	12.50	18.75	0.00	18.75
DK/NA	0.00	0.00	0.00	31.25	6.25	25.00
	Terrestrial oppositional collaborative socio-motor			Aquatic oppositional collaborative socio-motor		
	%	Boys (%)	Girls (%)	%	Boys (%)	Girls (%)
IL	25.00	0.00	25.00	31.25	12.50	18.75
EL	43.75	25.00	18.75	37.50	12.50	25.00
IL+EL	18.75	6.25	12.50	6.25	0.00	6.25
DK/NA	12.50	6.25	6.25	25.00	12.50	12.50

Note. DK/NA = don't know/no answer.

Table 6 shows the presence of allusions in the drawings to specific aspects of both IL and EL, in each and every domain and environment.

Table 6

Percentage of the Presence of Specific Aspects of IL and EL in Subjective Experience in Drawings

	Terrestrial collaborative socio-motor			Aquatic collaborative socio-motor		
	%	Boys (%)	Girls (%)	%	Boys (%)	Girls (%)
Rules IL	56.25	25.00	31.25	81.25	31.25	50.00
Time IL	0.00	0.00	0.00	0.00	0.00	0.00
Space IL	43.75	25.00	18.75	81.25	31.25	50.00
Relation IL	75.00	31.25	43.75	81.25	25.00	56.25
Material IL	75.00	31.25	43.75	87.50	31.25	56.25
Time EL	0.00	0.00	0.00	0.00	0.00	0.00
Space EL	6.25	6.25	0.00	0.00	0.00	0.00
Material EL	12.50	0.00	12.50	31.25	0.00	31.25
Relation EL	0.00	0.00	0.00	0.00	0.00	0.00
Persons EL	25.00	6.25	18.75	50.00	6.25	43.75
	Terrestrial oppositional socio-motor			Aquatic oppositional socio-motor		
	%	Boys (%)	Girls (%)	%	Boys (%)	Girls (%)
Rules IL	75.00	31.25	43.75	37.50	12.50	25.00
Time IL	0.00	0.00	0.00	0.00	0.00	0.00
Space IL	100.00	37.50	62.50	37.50	6.25	31.25
Relation IL	100.00	37.50	62.50	43.75	12.50	31.25
Material IL	6.25	0.00	6.25	43.75	12.50	31.25
Time EL	0.00	0.00	0.00	0.00	0.00	0.00
Space EL	6.25	0.00	6.25	0.00	0.00	0.00
Material EL	6.25	0.00	6.25	12.50	0.00	12.50
Relation EL	0.00	0.00	0.00	0.00	0.00	0.00
Persons EL	81.25	18.75	62.50	31.25	6.25	25.00
	Terrestrial oppositional collaborative socio-motor			Aquatic oppositional collaborative socio-motor		
	%	Boys (%)	Girls (%)	%	Boys (%)	Girls (%)
Rules IL	18.75	0.00	18.75	6.25	0.00	6.25
Time IL	0.00	0.00	0.00	6.25	0.00	6.25
Space IL	43.75	6.25	37.50	31.25	0.00	31.25
Relation IL	37.50	0.00	37.50	37.50	0.00	37.50
Material IL	37.50	0.00	37.50	37.50	0.00	37.50
Time EL	0.00	0.00	0.00	0.00	0.00	0.00
Space EL	12.50	6.25	6.25	0.00	0.00	0.00
Material EL	12.50	0.00	12.50	18.75	0.00	18.75
Relation EL	0.00	0.00	0.00	0.00	0.00	0.00
Persons EL	43.75	6.25	37.50	50.00	6.25	43.75

In the socio-motor domain of collaboration in TE, allusions to the IL traits Rules, Space, Relation and Material are identified, while the EL traits Material, Time and Persons are referred to. Boys and girls allude to these traits; however, boys also refer to the trait Space (EL) and girls to the trait Material (EL) (Figure 1 and 2).

Figure 1

Drawing of a Boy

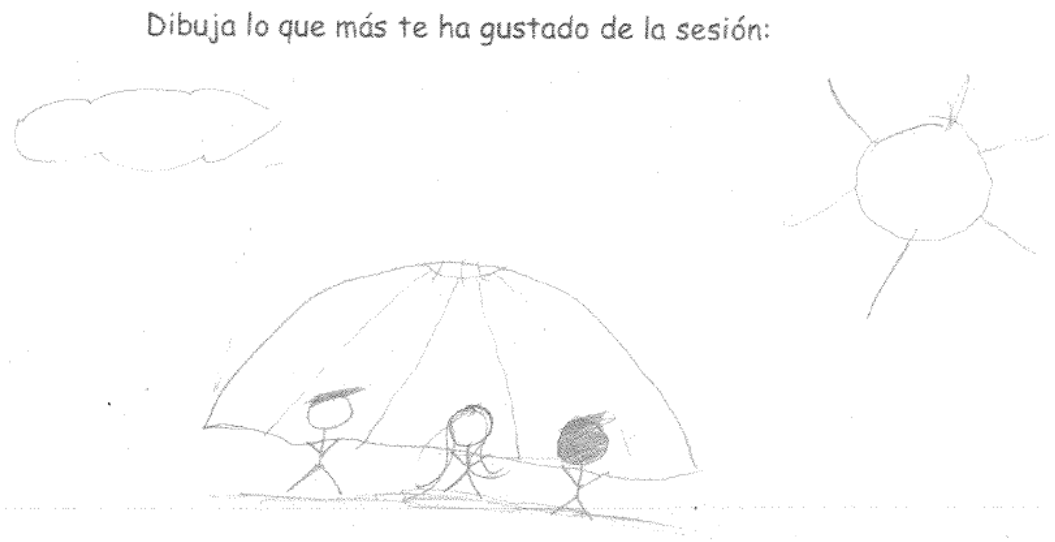


Figure 2

Drawing of a Girl



In the socio-motor domain of collaboration in the AE, drawings emerge that feature a variety of elements: Rules, Space, Relation and Material from the IL; and Material and Persons from the EL (Figure 3 and 4). In terms of gender, the only difference lies in the fact that only girls refer to the Material from the EL.

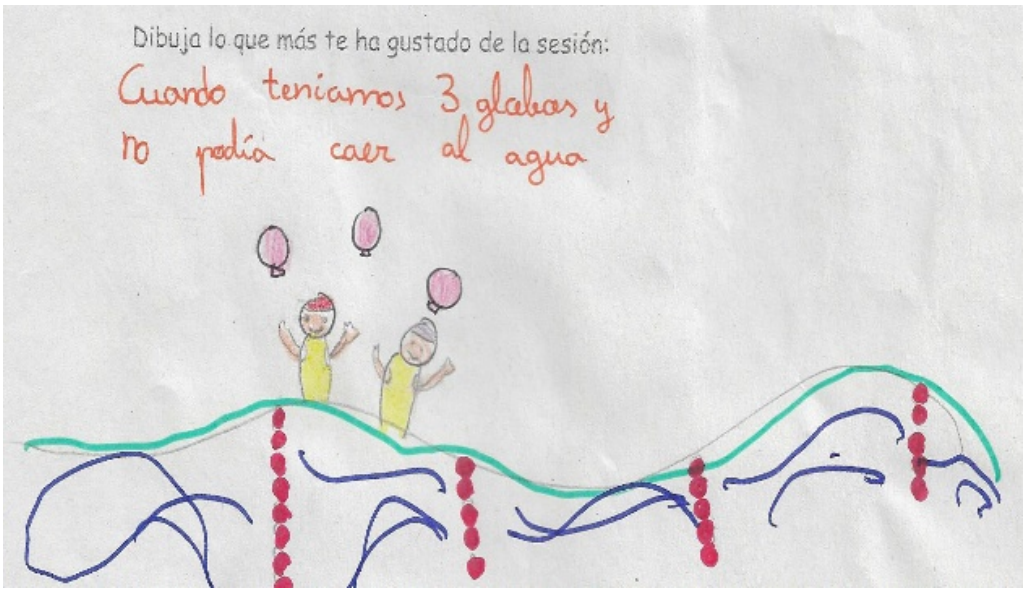
Figure 3

Drawing of a Boy



Figure 4

Drawing of a Girl



In the socio-motor domain with opposition in the TE, allusions to the Rules, Space and Relation of the IL and Persons of the EL are identified in both boys and girls (Figure 5 and 6). In turn, girls also allude to the IL Material and the EL Space and Material.

Figure 5

Drawing of a Boy

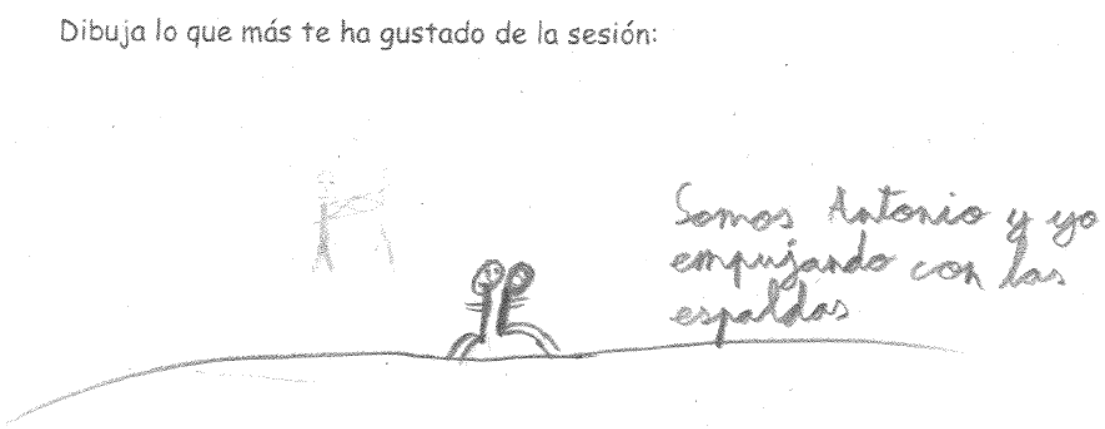


Figure 6

Drawing of a Girl



In the socio-motor domain with opposition in AE, allusions to the Rules, Space, Relation and Material of the IL and Persons of the EL are identified in both boys and girls (Figure 7 and 8). At the same time, only girls also make allusions to the EL Material.

Figure 7

Drawing of a Boy

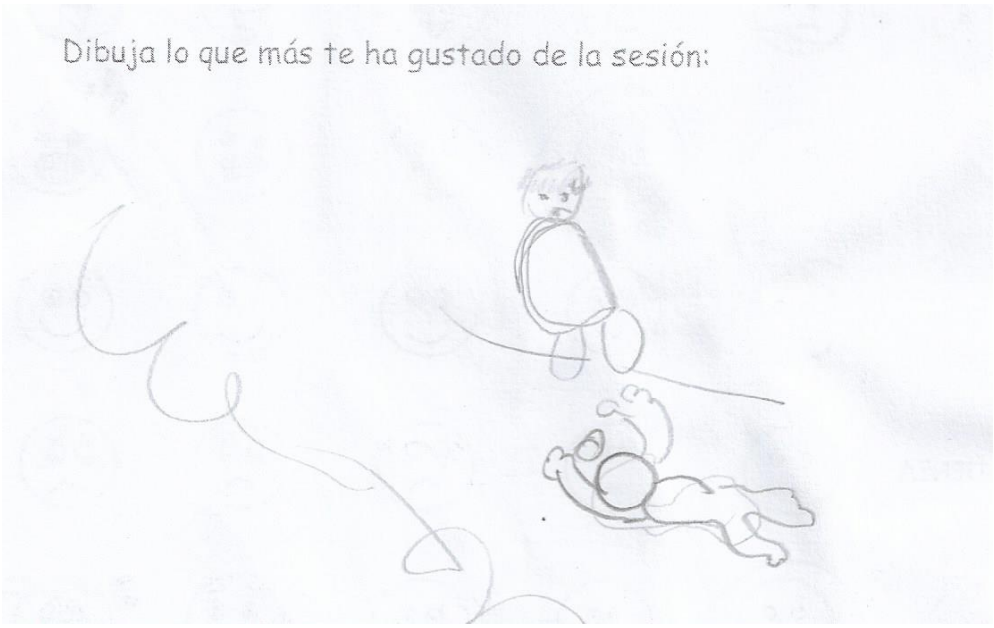


Figure 8

Drawing of a Girl



In the socio-motor domain of collaboration with opposition in TE, the drawings show allusions to the traits of Space in IL, and Space and Persons in EL, by boys and girls. However, by gender, girls also allude in their graphic representations to the Rules, Relation and Material features of the IL and to the Material of the EL (Figure 9 and 10).

Figure 9

Drawing of a Boy



Figure 10

Drawing of a Girl



The socio-motor domain of collaboration with opposition in AE provoked emotions that the pupils reflected in their drawings. Most of the boys showed dominant negative emotions by leaving the drawing blank. Only one of them (6.25%) alluded to the trait Persons in EL (Figure 11). The girls showed a richness of traits in their drawings: all IL traits and the EL traits Material and Persons (Figure 12).

Figure 11

Drawing of a Boy

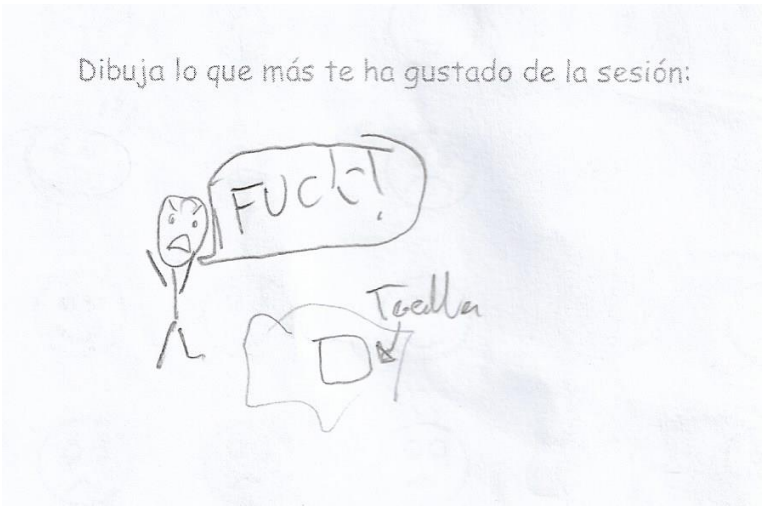


Figure 12

Drawing of a Girl



Table 7 shows the presence of references in the pupils' comments to specific aspects of both IL and EL, across all domains and media.

Table 7

Percentage of Presence of Specific Aspects of IL and EL in Subjective Experience in Comments

	Terrestrial collaborative socio-motor			**Aquatic collaborative socio-motor**		
	%	**Boys (%)**	**Girls (%)**	**%**	**Boys (%)**	**Girls (%)**
Rules IL	43.75	18.75	25.00	50.00	12.50	37.50
Time IL	0.00	0.00	0.00	0.00	0.00	0.00
Space IL	12.50	6.25	6.25	12.50	12.50	0.00
Relation IL	0.00	0.00	0.00	12.50	12.50	0.00
Material IL	31.25	25.00	6.25	31.25	25.00	6.25
Time EL	12.50	6.25	6.25	6.25	0.00	6.25
Space EL	0.00	0.00	0.00	0.00	0.00	0.00
Material EL	0.00	0.00	0.00	0.00	0.00	0.00
Relation EL	6.25	0.00	6.25	6.25	0.00	6.25
Persons EL	50.00	12.50	37.50	75.00	18.75	56.25
	Terrestrial oppositional socio-motor			Aquatic oppositional socio-motor		
	%	**Boys (%)**	**Girls (%)**	**%**	**Boys (%)**	**Girls (%)**
Rules IL	31.25	18.75	12.50	12.50	12.50	0.00
Time IL	12.50	0.00	12.50	12.50	0.00	12.50
Space IL	18.75	6.25	12.50	0.00	0.00	0.00
Relation IL	6.25	0.00	6.25	6.25	0.00	6.25
Material IL	6.25	6.25	0.00	12.50	0.00	12.50
Time EL	0.00	0.00	0.00	0.00	0.00	0.00
Space EL	0.00	0.00	0.00	0.00	0.00	0.00
Material EL	0.00	0.00	0.00	0.00	0.00	0.00
Relation EL	12.50	0.00	12.50	6.25	0.00	6.25
Persons EL	50.00	18.75	31.25	50.00	18.75	31.25
	Terrestrial oppositional collaborative socio-motor			**Aquatic oppositional collaborative socio-motor**		
	%	**Boys (%)**	**Girls (%)**	**%**	**Boys (%)**	**Girls (%)**
Rules IL	18.75	0.00	18.75	12.50	6.25	6.25
Time IL	12.50	0.00	12.50	31.25	6.25	25.00
Space IL	0.00	0.00	0.00	6.25	6.25	0.00
Relation IL	12.50	0.00	12.50	0.00	0.00	0.00
Material IL	18.75	6.25	12.50	6.25	0.00	6.25
Time EL	0.00	0.00	0.00	0.00	0.00	0.00
Space EL	0.00	0.00	0.00	0.00	0.00	0.00
Material EL	0.00	0.00	0.00	0.00	0.00	0.00
Relation EL	6.25	6.25	0.00	6.25	0.00	6.25
Persons EL	56.25	25.00	31.25	37.50	12.50	25.00

In the comments relating to the socio-motor domain of collaboration in TE there were allusions to Rules, Space and Material (IL) and Time and Persons (EL). For example, a boy commented: "we played with a parachute, and it was very cool" (Humor – Rules IL, Material IL, and Persons EL); or a girl indicated: "I loved the parachute" (Happiness – Rules IL, Material IL, and Persons EL). Only in the case of girls was the Relation trait (EL) mentioned, 6.25%.

Comments related to the socio-motor domain of collaboration in AE alluded to Rules and Material (IL) and Persons (EL). For example, a boy commented: "we played at not letting the balloon fall into the water, even though I swallow a lot of water" (Humor – Rules IL, Space IL, Material IL, and Persons EL); or a girl indicated: "I liked the game a lot and it was very funny when we had to hit the balloon" (Humor – Rules IL, Material IL, and Persons EL). On the other hand, only boys referred to Space and Relation (IL) and only girls to Time and Relation (EL).

As in the previous case, the socio-motor domain with opposition in the TE gave rise to comments that alluded to Rules and Space (IL) and Persons (EL). For example, one boy commented: "I thought the handkerchief game was funny" (Humor – Rules IL and Material IL) and another boy: "we laughed a lot" (Humor – Persons EL). In turn, in terms of gender, only the boys alluded to Material (IL) and only the girls to Time and Relation (IL) and Relation (EL), like one girl, who commented: "I laughed when I put my head in to take advantage" (Humor – Time IL and Space IL).

Comments related to the socio-motor domain with opposition in AE coincided in both boys and girls when referring to Persons (EL). For example, one girl commented: "when I had the ball, I was happy" (Happiness – Time IL, Material IL, and Persons EL). In turn, only boys alluded to Rules (IL), as one boy: "I liked the activity a lot" (Affect – Rules IL); and only girls to Time, Relation and Material (IL) and Relation (EL).

In the socio-motor domain of collaboration with opposition in the TE, the comments referred to the Material (IL) and the Persons (EL). For example, a boy reflected: "the referee gave the ball to the girls all the time" (Anger – Material IL and Persons EL) and a girl: "they didn't pass me the ball" (Rejection – Relation IL, Material IL, and Persons EL). At the same time, only the girls referred to Rules, Time and Relation (IL): "we always had the ball" (Joy – Time IL, Relation IL, and Material IL); and on the other hand, only the boys referred to the trait Relation (EL).

Finally, comments related to the socio-motor domain of collaboration with opposition in AE alluded to Rules and Time (IL) and Persons (EL). For example, a girl: "we won, and the game was cool" (Happiness – Rules IL and Time IL) and a boy: "it seemed that the referee was with the girls in the passing game and also my paper got wet" (Anger – Rules IL and Space IL). In turn, only the boys referred to Space (IL) and on the other hand only the girls referred to Material (IL) and Relation (EL).

Discussion

The aim of this study was to analyze the intensity of the subjective emotional experience, from a gender perspective, in the motor games carried out in the TE and in the AE, in socio-motor situations, during PE lessons.

Predominant emotions: positive and negative. Across all domains and media, the predominant emotions are positive, with results similar to those of other studies, such as that by Alcaraz-Muñoz et al. (2020), except in the socio-motor domain of collaborative play with opposition in the TE, where the percentages of both emotions are equal.

In the socio-motor domain of collaboration, the dominant emotions are positive, which is consistent with studies carried out at various educational stages, such as those by Lavega, Alonso, et al. (2014) and Gelpi et al. (2014), involving university students; and the study by Miralles et al. (2017) and Founaud and González-Audicana (2020), involving primary school pupils.

In the case of the socio-motor domains involving opposition and collaboration with opposition, both positive and negative dominant emotions were observed, with a higher percentage of negative emotions in the TE. By gender, the percentage of positive dominant emotions was higher in girls across both domains and media, which is consistent with the findings of Alcaraz-Muñoz et al. (2023) regarding the socio-motor domain of opposition; whilst the percentage of dominant negative emotions is higher among boys in both domains and settings, which differs from the findings of Alcaraz-Muñoz et al. (2023) in both domains. It should be noted that in the AE, all girls expressed a dominant positive emotion in the collaboration with opposition domain. These findings—which show that negative emotions were more frequent as the social structure of the games became more complex—are in line with those reported by Durán et al. (2014) in Compulsory Secondary Education and Sixth Form; and by Lavega, Alonso, et al. (2014).

Thus, it is corroborated that PE teachers have the possibility of triggering emotions in students, especially positive ones (Alonso Roque et al., 2013), of carrying out emotional PE (Miralles et al., 2017), which does not necessarily have to be based on competition; and not only in TE, but also in AE.

Specific dominant emotions. The dominant emotions are mostly the positive emotions of joy in the oppositional socio-motor domain (AE); of humor, in the collaborative socio-motor domains (both environments) and oppositional socio-motor (TE); although happiness also has a relevant presence. These data corroborate and confirm all the aforementioned studies on the generation of positive emotions in different motor scenarios (Gelpi et al., 2014; Lavega, Alonso, et al., 2014; Miralles et al., 2017; Romero-Martín et al., 2017), to which AE can be added. In the domain of collaboration with opposition (both environments), the dominant emotions expressed are positive and negative in the same proportion: joy and anger; results already pointed to by Lavega, Filella, et al. (2013) and Sáez de Ocáriz, Lavega, Lagardera, et al. (2014), when they found that victory and defeat could trigger these emotions.

According to the gender perspective, there are no differences between boys and girls, except in the socio-motor domain with opposition, since in the AE in girls the dominant emotion was joy, while in boys joy and affection were manifested to the same extent. In the socio-motor domain of collaboration with opposition, girls agglutinate positive emotions, with joy predominating in both environments; while boys show the negative emotion of anger in both environments; in line with the study by Sáez de Ocáriz, Lavega, Lagardera, et al. (2014), in concluding that at the secondary school stage, students tend to experience a greater number and intensity of conflicts and negative emotions than female students when they experience tasks as competitive, which could be due to the existing differences in playful social and social socialization linked to gender stereotypes.

Explanations of the dominant emotions based on qualitative data from drawings and comments in terms of IL and/or EL. In their drawings, the pupils mainly referred to a combination of IL and EL elements across all domains and media, except in the socio-motor domain of collaboration in the TE, where they referred in equal proportions to both only IL and the combination of IL and EL. According to Alonso et al. (2018), IL in the cooperative motor domain encourages pupils to participate actively by engaging in dialogue, making shared decisions and communicating through movement with others to achieve a common goal – a point they echoed and depicted graphically; they were particularly struck by the equipment used, in this case the parachute, but also by external aspects such as its design and material, amongst others. When analyzed by gender, it was observed that girls referred more frequently in their drawings to elements combining both logics.

It is noteworthy that they reflect graphically through drawings their dominant emotions associated with the combination of elements of one and the other logic, i.e., that they are based on a wealth of elements that arise from the domains of motor action, not on an aspect that stands out solely or only in relation to one logic. As in the study by Alcaraz-Muñoz et al. (2017), although these authors analyzed only comments based on collaborative games with opposition, boys generally allude more in their drawings to IL elements than girls, who also reflect to a greater extent other external aspects that influence their emotions; data that also coincide with the findings of Lavega, Lagardera, et al. (2014) and Sáez de Ocáriz, Lavega, Mateu, et al. (2014).

The references to IL and EL identified in the comments do not follow the same pattern as in the drawings, as the majority relate to EL in five out of the six cases, which differs from the results of previous studies (Alcaraz-Muñoz et al., 2017; Lavega, Lagardera, et al., 2014); only in the socio-motor domain of collaboration in the AE did references to the combination of IL and EL elements predominate (in this case, once again, IL resonated with the participants, although external aspects such as the color scheme of the material and the participants' transitional states also played a role). With regard to gender, there are once again similarities with previous studies (Alcaraz-Muñoz et al., 2017, 2023; Lavega, Lagardera, et al., 2014; Sáez de Ocáriz, Lavega, Lagardera, et al., 2014), as it was observed that girls' comments showed more elements of EL, particularly in the present study in the socio-motor domain involving opposition in the TE and in the collaborative socio-motor domain involving opposition in both media.

In the socio-motor domain of collaboration, Rules, Space, Relation and IL Material and Persons and EL Material appear in the majority in the qualitative analysis of the drawings; data that coincide with those of Lavega, Lagardera, et al. (2014) and Sáez de Ocáriz, Lavega, Lagardera, et al. (2014), except in the absence of references to IL Material in their case and in the present study, and in the presence of IL Time in the aforementioned study, which did not appear in the present study (neither IL, nor EL and no environments). In the comparison between environments, the drawings after the session in AE

reflected these aspects much more than in TE. By gender, only girls reflect the EL Material in both environments, a trend that Lavega, Lagardera, et al. (2014) point out, concluding that the female gender includes arguments about aspects external to the proposed motor situations.

In the socio-motor domain with opposition in both environments, graphic allusions to the Rules, Space and Relation of the IL and Persons of the EL are identified above all in both boys and girls. At the same time, girls also allude in the TE to the IL Material and to the Space and Material of the EL, and in the AE, only girls also allude to the Material of the EL. As highlighted by Sáez de Ocáriz, Lavega, Lagardera, et al. (2014) and Alonso et al. (2018), it seems that the opponent was perceived as friendly, which made the game a constant challenge that motivated to overcome, which could explain the allusions. Delving into the comparison between environments, the drawings after the session in the TE reflected these aspects much more than in the AE. The fact that the game was played without competition did not diminish the emotional experience and the awareness of their emotional influences was largely reflected in their drawings.

In the socio-motor domain of collaboration with opposition in TE, the drawings show allusions to the traits of Space of the IL, and Space and Persons of the EL, by boys and girls. However, by gender, girls also allude in their graphic representations to the Rules, Relation and Material features of the IL and to the Material of the EL. In AE most of the boys showed their dominant negative emotions by expressing that the drawing was blank because of this, only one of them alluded to the trait Persons of EL. The girls showed a richness of traits in their drawings: all IL traits and Material and Persons from EL. The coincidences between boys and girls regarding EL Persons and the latter's allusions to the IL Relation are in line with the findings of Alcaraz-Muñoz et al. (2017); justified by the pupils' moment of evolutionary and social development, who try to strengthen relationships with their peers by giving great importance to EL, to playing and enjoying with their friends. The gender differences for girls coincide with the arguments of Lavega, Lagardera, et al. (2014). In turn, the contagion of negative emotions in collaborative tasks with opposition highlighted by Lavega, Lagardera, et al. (2014) may explain the boys' decision not to draw, who, despite not participating in winning games, did compare themselves with the opposing group and discussed any unfavorable refereeing decision, in a negative emotional upward progression.

The verbal justifications in the socio-motor domain of collaboration in both environments referred mainly to Rules (IL), Material (IL) and Persons (EL). In the TE, boys and girls also referred to Space (IL) and Time (EL); data coinciding with those of Lavega, Lagardera, et al. (2014) and Sáez de Ocáriz, Lavega, Lagardera, et al. (2014). In turn, in the terrestrial domain, girls commented on Relation (EL) and in the aquatic domain, boys commented on Space (IL) and Relation (IL) and girls on EL Time and Relation features; which again coincides with Lavega, Lagardera, et al. (2014) in the assessment that the female gender includes more arguments on EL features.

The socio-motor domain with opposition in the TE gave rise to comments mainly on Rules and Space (IL) and Persons (EL). In turn, in terms of gender, only boys alluded to Material (IL) and only girls to Time and Relation (IL) and Relation (EL). In AE, boys and girls alluded to Persons (EL). In turn, only boys alluded to Rules (IL); and only girls to Time, Relation and Material (IL) and Relation (EL). The data follow the line of Sáez de Ocáriz, Lavega, Lagardera, et al. (2014) and Alonso et al. (2018), adding in this study the Relation (EL). Comparing environments, the difference lies in the allusion to Space (IL) only in the TE, the rest of the differences lie in gender, with girls being more eloquent in reflecting traits of the tasks in the AE.

In the socio-motor domain of collaboration with opposition in the TE, the comments mainly alluded to the Material (IL), and to the Persons (EL), and in the AE, mainly to the Rules and Time (IL) and to the Persons (EL). In both environments, there were many references to the ball and its possession, as well as to the role of referee, and to anecdotes relating to socio-motor roles, as indicated by Etxebeste et al. (2014). Although there was no competition as such, as there was no memory of the result, some participants interpreted it as such, for example, indicating “we won”, probably because of their sporting background. In terms of gender, it must be said that in TE only girls alluded to Rules, Time and Relation (IL) and only boys to the trait Relation (EL); while in the AE only boys alluded to Space (IL) and only girls to Material (IL) and Relation (EL). These data only partially coincide with those obtained by Alcaraz-Muñoz et al. (2017), in terms of the traits that together serve as justification for the dominant emotion, but in terms of gender differentiation, more in the comments that emerged after the activity in the TE than in the AE.

Complementarity of drawings and comments. Once a comparison has been made between the subjective justification through the drawings and the comments, it can be seen that there is a greater presence of IL and EL features in the former; from which it can be deduced that being able to express oneself graphically and verbally is an opportunity, a complement

that provides a wealth of arguments to understand the influences on the emotional experience, which can help to make decisions within the framework of physical-sports education.

It is worth highlighting the scarce or non-existent allusion to IL Time in all domains and environments; although there are more allusions in comments, which may be due to the fact that it is more difficult to represent it graphically than to allude to it verbally. The identified features that coincide in drawings and comments, considering each and every one of the domains and environments, are the following: in the socio-motor domain of collaboration in the TE, Rules, Space and Material (IL) and Time and Persons (EL); in the socio-motor domain of collaboration in the AE, Rules and Material (IL) and Persons (EL). In the socio-motor domain with opposition in the TE, Rules (IL) and Persons (EL); in the socio-motor domain with opposition in the AE, Persons (EL). In the socio-motor domain of collaboration with opposition in the TE, the Material (IL) and the Persons (EL); in the socio-motor domain of collaboration with opposition in the AE, Rules and Time (IL) and Persons (EL).

Complementarity between quantitative and qualitative data. The analysis of the quantitative data (emotional intensity) was complemented with the analysis of the qualitative data (indication of the dominant emotion in each session - motor action domain, together with an explanatory commentary on the most intense emotion and a representative drawing), with the intention of exploring in depth the connection between the aspects involved in the different motor situations and their relationship with the emotional experience arising from the educational practice. It was possible to verify the correspondence between the quantitative information expressed by the students regarding emotional intensity and the qualitative information expressed both verbally and graphically, since the highest value of emotional intensity corresponds to the dominant emotion in five of the six sessions studied, that is, in the three domains of motor action in the two environments. Only in the case of the socio-motor domain of collaboration in AE is not appreciated, due to the fact that there are three emotions with a very similar emotional intensity, and the one most indicated as dominant corresponds to the second in intensity, but with very close values. Thus, considering both the emotional intensity in quantitative terms and the underlying arguments and explanations can help teachers to understand students' self-knowledge and to understand the affective aspect in order to take it into account in their programming.

Conclusions

It has been possible to corroborate that PE teachers have the possibility of triggering emotions in students, especially positive ones, of carrying out emotional PE, which does not have to be based solely on competition; and not only in TE, but also in AE. In turn, if competition is included, even if there is a competitive memory, with winners and losers, the educational experience can be used, if negative emotions arise, for their identification and educational treatment, and the critical analysis of their relationship with recreational socialization and social, including that linked to gender stereotypes.

It is noteworthy that students graphically reflect their dominant emotions associated with the combination of elements of one and the other logic, i.e., that they are based on a wealth of elements that arise from the domains of motor action, not on an aspect that stands out only or is only related to one logic.

It has also been possible to verify the correspondence between the quantitative and qualitative written information, both verbally and graphically expressed by the students, which can be a complement that provides a wealth of arguments for teachers and students of PE, which helps to raise awareness and understanding of the emotional experience and to make decisions that contribute to the creation of emotionally positive learning environments and participation in them.

Ethics Committee Statement

The study was conducted in accordance with the Declaration of Helsinki and was approved by the Ethics Committee of the UNIVERSITY OF MURCIA (ID: 2214/2018, 13 February 2019).

Conflict of Interest

The authors of the manuscript entitled 'Intensity in the subjective emotional experience from a gender perspective in socio-motor situations and different environment in primary physical education' declare that there is no conflict of interest whatsoever between themselves or between the institutions to which they belong.

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Authors' Contribution

Conceptualization Argudo-Iturriaga, F. M. & Ruiz-Lara, E.; Methodology Argudo-Iturriaga, F. M. & Ruiz-Lara, E.; Formal Analysis Argudo-Iturriaga, F. M. & Ruiz-Lara, E.; Investigation Argudo-Iturriaga, F. M. & Ruiz-Lara, E.; Writing – Original Draft Argudo-Iturriaga, F. M. & Ruiz-Lara, E.; Writing – Review & Editing Argudo-Iturriaga, F. M. & Ruiz-Lara, E.; Visualization Argudo-Iturriaga, F. M. & Ruiz-Lara, E.; Supervision Argudo-Iturriaga, F. M. & Ruiz-Lara, E. All the authors have read and agree with the published version of the manuscript.

Data Availability Statement

Data available on TESEO (https://www.educacion.gob.es/teseo/mostrarRef.do?ref=471267).

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References

Alcaraz-Muñoz, V., Alonso, J. I., & Yuste, J. L. (2017). Jugar en positivo: Género y emociones en educación física. *Apunts. Educación Física y Deportes*, *129*, 51–63. https://doi.org/10.5672/apunts.2014-0983.es.(2017/3).129.04

Alcaraz-Muñoz, V., Alonso, J. I., & Yuste, J. L. (2022). Design and validation of games and emotions scale for children (GES-C). *Cuadernos de Psicología del Deporte*, *22*(1), 28–43. https://doi.org/10.6018/cpd.476271

Alcaraz-Muñoz, V., Alonso, J. I., & Yuste, J. L. (2023). How do girls and boys feel emotions? Gender differences in physical education in primary school. *Physical Culture and Sport. Studies and Research*, *100*(1), 25–33. https://doi.org/10.2478/pcssr-2023-0016

Alcaraz-Muñoz, V., Cifo, M. I., Gea, G. M., Alonso, J. I., & Yuste, J. L. (2020). Joy in movement: Traditional sporting games and emotional experience in elementary physical education. *Frontiers in Psychology*, *11*, 588640. https://doi.org/10.3389/fpsyg.2020.588640

Alonso, J. I., Lagardera, F., Lavega, P., & Etxebeste, J. (2018). Emorregulación y pedagogía de las conductas motrices. *Acción Motriz*, *21*(1), 67–76. https://doi.org/10.65330/am.v21i1.124

Alonso, J. I., Lavega, P., & Reche, F. (2012). Análisis de la vivencia emocional desde la perspectiva de género en juegos deportivos de cooperación con oposición en alumnos de Bachillerato. In I. Martínez, R. Cayero, & J. Calleja (Coords.), *Investigación e innovación en el deporte* (pp. 161–169). Paidotribo.

Alonso, J. I., Marín, M., Yuste, J. L., Lavega, P., & Gea, G. (2019). Conciencia emocional en situaciones motrices cooperativas lúdicas y expresivas en Bachillerato: perspectiva de género. *Educatio Siglo XXI*, *37*(1), 195–212. https://doi.org/10.6018/educatio.363461

Alonso Roque, J. I., Gea García, G., & Yuste Lucas, J. L. (2013). Formación emocional y juego en futuros docentes de educación física. *Revista Electrónica Interuniversitaria de Formación del Profesorado*, *16*(1), 97–108. https://doi.org/10.6018/reifop.16.1.179461

Beavers, G. A., Iwata, B. A., & Lerman, D. C. (2013). Thirty years of research on the functional analysis of problem behaviour. *Journal of Applied Behavior Analysis*, *46*(1), 1–21. https://doi.org/10.1002/jaba.30

Durán, C., Lavega, P., Planas, A., Muñoz, R., & Pubill, G. (2014). Educación física emocional en secundaria. El papel de la sociomotricidad. *Apunts. Educación Física y Deportes*, *117*, 23–32. https://doi.org/10.5672/apunts.2014-0983.es.(2014/3).117.02

Etxebeste, J., Del Barrio, S., Urdangarin, C., Usabiaga, O., & Oiarbide, A. (2014). Ganar, perder o no competir: la construcción temporal de las emociones en los juegos deportivos. *Educatio Siglo XXI*, *32*(1), 33–48. https://doi.org/10.6018/j/194051

Founaud, M. P., & González-Audicana, C. (2020). The emotional experience of primary school students in physical education. *Journal of Sport and Health Research*, *12*(Suppl. 1), 15–24. https://dialnet.unirioja.es/servlet/articulo?codigo=7523035

Gea-García, G., Alonso-Roque, J. I., Rodríguez-Ribas, J. P., & Caballero-García, M. F. (2017). ¿Es la vivencia emocional cuestión de género? Análisis de juegos motores de oposición en universitarios. *Revista de Investigación Educativa*, *35*(1), 269–283. https://doi.org/10.6018/rie.35.1.249661

Gelpi, P., Romero-Martín, M. R., Mateu, M., Rovira, G., & Lavega, P. (2014). La educación emocional a través de las prácticas motrices de expresión. Perspectiva de género. *Educatio Siglo XXI*, *32*(1), 49–70. https://doi.org/10.6018/j/194081

Gutiérrez-Díaz del Campo, D., García-López, L. M., Chaparro-Jilete, R., & Fernández-Sánchez, A. J. (2014). Aplicación del modelo de Educación Deportiva en segundo de Educación Primaria. Percepciones del alumnado y el profesorado. *Cuadernos de Psicología del Deporte*, *14*(2), 131–144. https://doi.org/10.4321/S1578-84232014000200014

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate data analysis (7th ed.)*. Pearson.

IBM Corp. (2016). *IBM SPSS Statistics for Windows (Version 24.0) [Computer software]*.

Jaqueira, A. R., Lavega, P., Lagardera, F., Aráujo, P., & Rodrigues, M. (2014). Educando para la paz jugando: género y emociones en la práctica de juegos cooperativos competitivos. *Educatio Siglo XXI*, *32*(1), 15–32. https://doi.org/10.6018/j/194071

Lagardera, F. (2007). La conducta motriz: un nuevo paradigma para la educación física del siglo XXI. *Tándem: Didáctica de la Educación Física*, *24*, 89–106. https://dialnet.unirioja.es/servlet/articulo?codigo=2286133

Lagardera, F., & Lavega, P. (2003). *Introducción a la praxiología motriz*. Paidotribo.

Lavega, P., Alonso, J. I., Etxebeste, J., Lagardera, F., & March, J. (2014). Relationship between traditional games and the intensity of emotions experienced by participants. *Research Quarterly for Exercise and Sport*, *85*(4), 457–467. https://doi.org/10.1080/02701367.2014.961048

Lavega, P., Filella, G., Lagardera, F., Mateu, M., & Ochoa, J. (2013). Juegos motores y emociones. *Cultura y Educación*, *25*(3), 347–360. https://doi.org/10.1174/113564013807749731

Lavega, P., Lagardera, F., March, J., Rovira, G., & Araújo, P. C. (2014). Efecto de la cooperación motriz en la vivencia emocional positiva: perspectiva de género. *Movimento*, *20*(2), 593–618. https://doi.org/10.22456/1982-8918.38120

Lavega, P., Sáez de Ocáriz, U., Lagardera, F., March, J., & Puig, N. (2017). Emotional experience in individual and cooperative traditional games. A gender perspective. *Anales de Psicología*, *33*(3), 538–547. https://doi.org/10.6018/analesps.33.3.260811

MacPhail, A., & Kinchin, G. (2004). The use of drawings as an evaluative tool: students' experiences of sport education. *Physical Education & Sport Pedagogy*, *9*(1), 87–108. https://doi.org/10.1080/1740898042000208142

Méndez-Giménez, A., & Martínez de Ojeda, D. (2017). Percepciones del estudiante de primaria sobre el uso del modelo de educación deportiva para la enseñanza del mimo. *Revista Española de Educación Física y Deportes*, *418*, 21–34. https://doi.org/10.55166/reefd.vi418.576

Miralles, R., Filella, G., & Lavega, P. (2017). Educación física emocional a través del juego en educación primaria. Ayudando a los maestros a tomar decisiones. *Retos. Nuevas Tendencias en Educación Física, Deporte y Recreación*, *31*, 88–93. https://doi.org/10.47197/retos.v0i31.49607

Mowling, C. M., Brock, S. B., & Hastie, P. A. (2006). Fourth grade students' drawing interpretations of a sport education soccer unit. *Journal of Teaching in Physical Education*, *25*(1), 9–35. https://doi.org/10.1123/jtpe.25.1.9

Parlebas, P. (2001). *Juegos, deporte y sociedad. Léxico de la praxiología motriz*. Paidotribo.

Real Decreto 1090/2015, de 4 de diciembre, por el que se regulan los ensayos clínicos con medicamentos, los Comités de Ética de la Investigación con medicamentos y el Registro Español de Estudios Clínicos. *Boletín Oficial del Estado*, 307, de 24 de diciembre de 2015. https://www.boe.es/eli/es/rd/2015/12/04/1090

Romero-Martín, M. R., Gelpi-Fleta, P., Mateu, M., & Lavega, P. (2017). Influencia de las prácticas motrices sobre el estado emocional de estudiantes universitarios. *Revista Internacional de Medicina y Ciencias de la Actividad Física y el Deporte*, *17*(67), 449–466. https://doi.org/10.15366/rimcafd2017.67.004

Sáez de Ocáriz, U., Lavega, P., Lagardera, F., Costes, A., & Serna, J. (2014). ¿Por qué te peleas? Conflictos motores y emociones negativas en la clase de Educación Física. El caso de los juegos de oposición. *Educatio Siglo XXI*, *32*(1), 71–90. https://doi.org/10.6018/j/194091

Sáez de Ocáriz, U., Lavega, P., Mateu, M., & Rovira, G. (2014). Emociones positivas y educación de la convivencia escolar. Contribución de la expresión motriz cooperativa. *Revista de Investigación Educativa*, *32*(2), 309–326. https://doi.org/10.6018/rie.32.2.183911

Williams, J. G., Eston, R. G., & Furlong, B. (1994). CERT: A perceived exertion scale for young children. *Perceptual and Motor Skills*, *79*(3), 1451–1458. https://doi.org/10.2466/pms.1994.79.3f.1451

World Medical Association. (2024, October). World Medical Association Declaration of Helsinki: Ethical principles for medical research involving human participants. https://www.wma.net/policies-post/wma-declaration-of-helsinki-ethical-principles-for-medical-research-involving-human-subjects/

Yelling, M., Lamb, K. L., & Swaine, I. L. (2002). Validity of a pictorial perceived exertion scale for effort estimation and effort production during stepping exercise in adolescent children. *European Physical Education Review*, *8*(2), 157–175. https://doi.org/10.1177/1356336X020082007