

## Analysing Emotions and Social Skills in Physical Education

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**Abstract** : The purpose of this study is to explore the intensity of emotions and social skills in a physical education teaching unit (PE). Two instruments of analysis are used: the GES (Games and Emotion Scale) to evaluate emotions and an ad-hoc questionnaire to measure the social skills of 21 students in the sixth year of primary education. The data analysis was carried out using a generalised estimating equation model (GEE), taking into account the correlation between the different scores of the same subject and the asymmetry of the data. The results show positive emotions to be significantly more intense than negative ones and ambiguous emotions are revealed throughout all the PE sessions.

**Keywords:** physical education, emotions, social skills, primary education.

## 1. Introduction

Different authors agree that being aware of emotions, putting names to them and identifying them in others, contributes to well-being and personal development, as well as strengthening social relations with others [1-2-3-4-5-6-7-8]. The concept of emotional intelligence was expanded thanks to the studies carried out by Goleman [9], which highlighted the need to reconcile emotion with cognition in the classroom and stressed that education should include skills such as self-control, self-awareness, empathy, active listening, conflict resolution and peer collaboration. Likewise, one of Bisquerra's key principles highlights that [1-10]:

“emotional education should be understood as a process of human development that encapsulates personal and social circumstances, and which involves changes in cognitive, attitudinal and procedural structures” (p.7).

Over recent years, various practices have appeared which are clearly focused on the development of emotional competences [11-12]. Knowing which emotions are generated in students depending on the practices carried out provides the teacher with important information to orientate classes and activities and to help them adapt tasks accordingly [13-14-15-16-17-18-19].

Regarding social skills, Monjas [20] defines them as the skills possessed by individuals to be able to execute interpersonal tasks. In other words, this refers to the behaviour needed to relate to others. Relations with others and with one's peers are necessary and contribute towards knowledge and validation of the self, since shared activities help one to reflect on oneself. When children play together they are sharing experiences that help to promote the development of significant social competences (assuming responsibility, returning favours, courtesy, ...). These relations also provide emotional support and help the child to become less and less emotionally dependent on their parents and to grow into adults [1-2-5-21-22-23-24-25].

Considering motor skills, authors confirm the relation between physical activity and improvements in psychosocial factors [26-27-28]. The studies carried out by these authors highlight improvements in following rules, respecting others, responsibility, cooperation, self-esteem and solidarity, among other aspects. Moreover, the same authors also consider sport to be a tool of social transformation. It would seem that improvements in physical activity can also be extrapolated to other daily life situations [29-30]. All the social attitudes and individual and collective behaviours learned during sporting activities are manifested again in the future, in work contexts or in family relations. Nevertheless, the socialising potential of sport can also have negative consequences, depending on the way the person socialising establishes relations, the socialising agents involved and the social context. The teacher's role is thus vital, insofar as they are required to manage the classroom and to decide what they can ask of each student, since asking a student to do more than they are capable of at any given time can produce negative results. Gutiérrez [29] and Rodríguez [30], classified the

social and personal values developed when practising physical activity and sport, referring mainly to social values such as: the participation of everyone, respect for others, friendship, teamwork, expression of feelings, the struggle for equality; and to personal values such as: mental and physical skills, creativity, enjoyment, perseverance, recognition and respect. Observing all the benefits that physical activity brings to individuals, it is important to ask what happens in schools. Studies by various authors highlight the positive relation between carrying out physical activity on a regular basis and academic achievement [31-32-33-34-35-36-37]; particularly in students who carry out physical activity outside school, which is to say those who carry out more than those who only do it at school.

The purpose of this study is to explore the intensity of emotions and social skills in a physical education didactic sequence (PE).

## **2. Methods**

The design of this study is quasi-experimental since a non-random sample is used without a control group. The study takes the form of a post-intervention control since responses are observed after having applied the instrument without the application of a prior measure. The study combines quantitative and qualitative methodologies.

### *2.1 Sample*

The study has been carried out with 21 students aged between 11 and 12 years old (47.6% boys and 52.3% girls) in year six of primary education in the Mas Prats de Palafolls school of Barcelona. No losses were reported during the study and all the data has been obtained anonymously which means that no specific form of consent was required.

### *2.2 Instruments*

An adapted version of the GES (Games and Emotion Scale) - validated by Lavega, March and Filella (2013) - was used, since it is considered easy to understand and can be completed by primary school students. The adaptation consisted in reducing the number of emotions [1-10], resulting in a total of 6 emotions (happiness, joy, fear, anger, sadness and surprise). A 10-point Likert scale is used, in which 1 means that they had not felt that emotion and 10 means that they had felt it in the most intense way possible. This instrument assessed the emotional intensity experienced in each of the motor practices carried out.

An ad-hoc questionnaire externally validated by six experts was also used. Two of the experts are doctors in Physical Activity and Sports Sciences, one a doctor in Psychology, one a primary school teacher, and two doctors in Pedagogy. All the experts had research experience in the educational field with at least 7 years' experience in the university sector. The questionnaire was inspired by the Programa de Enseñanza de Habilidades de Interacción Social 'Programme for Teaching Social Interaction Skills' [20]. The questionnaire includes 10 questions related to the psychosocial aspects that

students had heard throughout the session. A 10-point Likert scale is used, in which 1 means that they had not felt the emotion and 10 means that they had felt it in the most intense way possible.

### *2.3 Procedure*

The instrument (adapted version of the GES) has been implemented during a teaching unit comprising six 90-minute sessions carried out twice a week as part of a practice lasting three weeks (April and May 2017).

The teaching unit presents a compilation developed with the PE teacher of everything that had been worked on throughout the upper cycle (year 5 and 6 of primary). According to Parlebas's classification [38], games belong to 3 domains of motor action: psychomotor games, cooperation-opposition, and cooperation. After each session the two instruments were administered to the participants to assess the intensity of emotions (GES scale) and social skills (ad-hoc questionnaire).

### *2.4 Data analysis*

In the first place, a descriptive analysis of the items of the GES scale [39] and the items of the questionnaire on social skills was carried out for each session. The kind of emotion, social skill, and sex, were considered to be dependent variables, while the subject, the sessions and special educational needs were established as independent variables. The Shapiro Wilk test was used to assess the normality fit of the intensity of the emotions and the intensity of the social skills. The normality hypothesis was rejected given the asymmetric distribution presented by the data obtained with the two instruments. Subsequently, the quantitative data was analysed using a generalised estimating equations model (GEE), taking into account the correlation between the different scores of the same subject and the asymmetry of the data [40]. In order to analyse the intensity of emotions and social skills, the type of emotion was considered in the first case and the type of skill in the second, as an intra-subject factor, with the subject being considered as a between-subject in both cases. Subsequently, multiple comparisons were applied ad hoc to study the differences between the factor categories. The level of statistical significance considered stood at a value of  $p < 0.05$ , with a confidence index of 95%. Statistical software SPSS v. 23 was used.

In order to analyse the data, the emotions of the GES scale were classified into positive (happiness and joy), ambiguous (surprise) and negative (fear and anger), according to the classification of basic emotions of Lazarus [41] and Bisquerra [1-10]. The same procedure was followed with the items of the social skills questionnaire, classifying them into: conversational skills (tone of voice and positive attitude), ability to solve interpersonal problems (to know how to negotiate and adapt to find a solution), basic social interaction skills (acceptance, know how to say thank you and to apologise) and skills related to feelings and opinions and making friends (non-discrimination, adapting and helping), following the classification criteria presented by Monjas [20].

### 3. Results

Overall, it should be noted that positive emotions obtained the highest results in all the sessions carried out, with ambiguous emotions obtaining intermediate intensity and negative emotions obtaining lower results. Throughout the sessions, positive emotions obtained a mean score of no less than 8.04, with the cooperative games session in small groups obtaining the highest scores and the cooperation-opposition games obtaining the lowest. Regarding negative emotions, the most important point to note is that the highest scores were obtained in the group cooperation games. Although these scores are very low compared to the positive emotion scores, they are, nevertheless, the highest ones recorded. Finally, ambiguous emotions obtained similar results in all the sessions, with the traditional games session obtaining the highest score and the cooperation-opposition games session obtaining the lowest. However, the difference between the highest and lowest score is only 0.76 if we compare the mean scores (Table 1).

In general, it is important to note that the skills related to feelings, emotions and opinions, and those related to making friends, obtained the highest scores in all the sessions, with the highest score corresponding to the orienteering race for this particular skill. By contrast, the lowest score was obtained in the interpersonal problem solving skill in traditional games. In general, we note that the scores are medium-high, since the lowest score recorded is 6.57, with the rest being above 7. Considering the fact that a 10-point Likert scale was used, the scores are all above the median (Table 2).

*Emotions:* Significant differences are observed between the different types of basic emotions ( $p < .05$ ). The post-hoc analyses carried out reveal that positive emotions ( $M = 8.71$ ) were felt with a significantly higher intensity than ambiguous ( $M = 6.68$ ;  $p < .05$ ) and negative ones ( $M = 1.57$ ;  $p < .05$ ). Significant differences were also observed between ambiguous and negative emotions ( $p < .05$ ), with the latter being less intense in subjects (Graph 1).

*Social skills:* No significant differences were observed between the four social skills described ( $p > .05$ ); conversational skills ( $M = 8.35$ ), interpersonal problem solving skills ( $M = 8.57$ ), basic social interaction skills ( $M = 9.11$ ) and skills related to feelings, opinions and making friends ( $M = 8.59$ ). The four social skills obtained high and similar scores in all the sessions, in which the lowest mean score obtained was in the case of conversational skills.

### 4. Discussion

This study has verified that the 6 PE sessions carried out, which reflected what had been worked on throughout the upper cycle of primary school, have mainly promoted high levels of intensity in relation to positive emotions, intermediate levels of ambiguous emotions, and low levels of negative emotions. These results reinforce the work carried out by other authors with similar studies on emotions and motor skills [16-17-18]. Furthermore, by becoming more aware of their emotions, students have taken the first step in any pedagogical programme aimed at developing emotional competences. The

results also show the positive effect on personal well-being and on strengthening relations between peers [1-2-4-5-6-10]. The same has occurred with regard to the intensity of social skills, given that a level of intensity has been found for all the social skills described which is above the median, with notable means in all skills. These results suggest that the social and personal values have been developed throughout the primary years: the participation of everyone, respect for others, friendship, teamwork, expression of feelings, the struggle for equality [29]. It could be argued that regular motor practice throughout a 6-year period with the same peers could be one of the reasons behind the strengthening of relations and the improvement of psychosocial factors among students, [26-27], since physical activity provide improvements in psychosocial factors among peers.

## **Conclusions**

Knowing which emotions and social skills are generated in students is an important way for teachers to assess their own practice and to become more aware of how students feel and which areas need to be developed. This study has helped us to verify that the 6 PE sessions carried out fall within the framework of an inclusive methodology, considering the intensity of the emotions and social skills experienced by all participants in the study. It is also important to note that these results provide considerable information on the work developed in the area of physical education, since they help to show that classes are being developed appropriately, and that students show high levels of positive emotions and social skills. This in turn indicates good relations among peers, clear evidence of cooperation, and human relations that promote coexistence.

Regarding the limitations of this study, we should point out the small size of the sample ( $n = 21$ ) and the specific context in which it is conducted, which means that the results cannot be extrapolated to the general population. In view of this, it would be interesting to carry out similar studies in different populations and in different social and geographical contexts to verify the results found.

As a final reflection, and given the results obtained in this study, it would be interesting to assess students' emotions and social skills in different curricular areas, since this would help teachers improve their interventions and remedy many of the current problems affecting children in our country, from the most pressing cases of bullying to socially excluded children, taking in the needs of each individual.

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Table 1. Descriptive statistics of the sessions carried out and intensity of emotions.  
Mean and standard deviation.

Sessions	Type of emotions					
	Positive		Ambiguous		Negative	
	Mean	SD	Mean	SD	Mean	SD
<b>Group cooperation games (whole group)</b>	8.11	2.25	6.47	3.51	2.19	1.64
<b>Cooperation-opposition games</b>	8.04	1.85	6.33	2.10	1.79	0.82
<b>Traditional games</b>	8.97	1.23	7.09	2.50	1.26	0.47
<b>Strategy games</b>	8.80	2.00	6.71	2.81	1.79	1.46
<b>Cooperative games in small groups</b>	9.40	1.11	6.71	3.45	1.26	0.54
<b>Orienteering races</b>	8.92	1.98	6.76	3.60	1.15	0.35

Table 2. Descriptive statistics of the sessions carried out and the social skills resulting from them. Mean and standard deviation.

Sessions	Social Skills							
	Conversational skills		Interpersonal problem solving skills		Basic social interaction skills		Skills related to feelings, emotions and making friends	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Group cooperation games	7.86	2.17	8.00	2.28	8.74	1.77	8.95	1.40
Cooperation-opposition games	7.98	2.37	7.81	2.22	7.71	2.75	8.69	1.79
Traditional games	7.64	2.72	6.57	2.65	7.79	2.32	8.29	2.16
Strategy games	8.76	2.64	8.52	1.97	8.46	1.98	9.11	1.97
Cooperative games in small groups	9.74	0.98	9.57	1.02	9.36	1.62	9.79	0.70
Orienteering races	9.54	0.90	9.61	1.03	9.33	1.27	9.82	0.41