



## Research paper

# “I feel lonely, I don't understand you when you talk, and I find it hard to breathe”. Analysis of the emotional tensions of physical education students in the Spanish setting of COVID-19

David Hortigüela-Alcala <sup>a</sup>, Oscar Chiva-Bartoll <sup>b, \*</sup>, Alejandra Hernando-Garijo <sup>a</sup><sup>a</sup> Department of Specific Didactics, University of Burgos, Burgos, Spain<sup>b</sup> Department of Education, University Jaume I, Castellón, Spain

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## ABSTRACT

The aim of this research is to analyse the emotional tensions experienced by PE students in the setting of the COVID-19 pandemic. Twenty-four students participated in the study. A qualitative methodology was used in which, taking into account the safety and prevention conditions established for the COVID-19 situation, three categories of analysis were obtained: a) experiences regarding the use of the face mask; b) experiences regarding physical distancing; and c) social interaction between students. The researchers' logbooks and three discussion groups were used as data collection instruments. The results show how the COVID-19 safety measures generated emotional changes in students.

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## 1. Introduction

The situation of the global COVID-19 pandemic has led to strong adjustments in education systems. These changes are taking place at different levels, ranging from the purely legislative to the more methodological ones (Kapasia et al., 2020; Khirwadkar et al., 2020). One of the subjects that has been most affected by this health pandemic situation has been PE (Hambali et al., 2020; Howley, 2021; Santos-Pastor et al., 2021), as limitations such as physical distancing, the use of face masks and constant hygiene measures might have conditioned the students' experiences on a social and emotional level.

To better understand this issue, it is important to note that PE is a socially constructed subject that could be of educational value on the basis of its potential to develop different educational domains (McNamee, 2009; Metzler, 2017; Stoltz, 2014) such as the motor, cognitive, social and affective ones. This wide range of domains is closely linked to the construct of Physical Literacy (Whitehead, 2010), providing a rich and complex view of PE.

However, preventive measures during the pandemic have led many practitioners to approach the subject in a different way, running the risk of its educational potential being left in the background (Varea & González-Calvo, 2020). For instance, Baena-Morales et al. (2021) point out the preponderance of content related to physical condition and health, leaving contents based on more social interaction and emotional baggage such as games and sports and artistic or expressive activities in the background. Thus, the weakening of the affective and social domain of the subject could have conditioned the PE students' experiences during the pandemic (Cuenca-Soto et al., 2021). This can also be seen in the diversity of resources used in the current PE mediated by COVID19 in forums and social networks, based mainly on individual fitness work (Bozkurt & Sharma, 2020; Burgess & Sievertsen, 2020; Cahapay, 2020; Howley, 2021). This is truly dangerous, since if we limit the work of the subject fundamentally to physical activity and forget its socio-affective approach, there is a possibility that, over time, PE will be reduced in time load or even eliminated from the educational curriculum (Cale & Harris, 2013).

At this point, it is essential to highlight that PE has an ideal context to work on the social and affective dimensions (Metzler, 2017). Due to its experiential and socio-affective nature, it can inspire students to learn from real personal interactions that lead to

\* Corresponding author.

E-mail address: [ochiva@uji.es](mailto:ochiva@uji.es) (O. Chiva-Bartoll).

observation, reflection and proposals of new ways of acting and feeling in the face of conflicts and social relationships (Gillespie, 2009). Therefore, since students' emotional and behavioural difficulties are recognized as a continuing issue in adolescent development and education, it is important to examine students' perceived psychological and emotional experiences in secondary school (Ratell & Duchesne, 2014).

It is particularly important for this study, which focuses on the socio-affective and emotional dimensions of students, that emotion is an inextricable aspect of educational practices (Sheppard & Levy, 2019; Zembylas, 2004). In this sense, the pandemic-related measures and limitations may have a direct influence on students' emotions and social experiences, as they are often subject to a great deal of pressure, fear and insecurity, which are expressed by the media and rooted in society (Barker et al., 2020). In this new reality, students cannot share PE materials and equipment, nor can they approach or touch their classmates because they run the risk of becoming infected. Therefore, the cooperation and socialisation component, which is very important in PE, is clearly diminished in the pandemic scenario. Thus, since there could be an underlying fear of physical contact, on an emotional level they could have subconsciously and unwittingly become "risk buddies".

Here, since this fear seems to feed back to each other, the theory of emotional contagion might be particularly relevant to understand what this new reality in PE means for them on an emotional level (Hatfield et al., 1993). That is, since students are asked to share materials and spaces in PE in such a situation of public health concern (Varea & González-Calvo, 2020), it seems reasonable to think that emotional contagion could be taking place under these circumstances.

### 1.1. The theory of emotional contagion

In recent years, emotion has been the focus of growing attention in education. It has been argued that emotion is an inextricable aspect of educational practices and discourses. It has also been suggested that students' experiences of positive (e.g. passion, enthusiasm) and negative (e.g. disappointment, anxiety) emotions have a significant impact on their learning (Goleman, 1995; Zembylas, 2007). Since emotions are constructed by psychological, social and cultural experiences, in the educational setting they are grounded in the particular social context of teachers, students and their interactions in the classroom. Therefore, taking into account the circumstances of PE in the pandemic scenario, the theory of emotional contagion could help us understand the emotional tensions experienced by PE students.

Emotional understanding, according to Denzin (1984), 'is an intersubjective process requiring that one person enter into the field of experience of another and experience for herself the same or similar experiences experienced by another' (p. 137). The theory of emotional contagion establishes the tendency to imitate and synchronise behaviours and expressions at a social level, leading to an emotional convergence between people. For example, students 'infect' each other with shared emotions, which directly influences the quality of their collaborative work and learning processes.

Scientific literature attributes three possible causes to this contagion, such as (1) the role of social comparison, which is the conscious comparison of one's own feelings to the feelings of other people who are in the same situation, (2) empathy, understood as the influence of imagining another person's feelings, and (3) the role of emotional interpretation, which is using others' emotional displays as information, regardless of sharing their predicament (Elfenbein, 2014).

Some researchers believe that the more exaggerated and unusual an emotional expression is, the more likely it is to spark

contagion (Hess & Blairy, 2001), while others argue to the contrary that the more authentic and natural an emotional expression appears to be, the greater the power of its emotional contagion (Hatfield et al., 2014; Sato et al., 2008). In any case, given that PE settings, usually based on continuous social interaction, seem to facilitate the emergence of such situations, the effect of the emotional contagion could be particularly strong for PE students working interdependently, who need to coordinate, communicate, and interact each other. This contagion tendency becomes more acute in contexts of generalisation of behaviours and imposition of norms, which is clearly the case in the current pandemic scenario, since diverse norms are imposed in order to prevent health risks and transmission of infection. These processes of emotional contagion, sometimes subconsciously, bias and inhibit the individual's personality, especially that of children, since the influence of others strongly shapes their thoughts and actions (Cacioppo & Gardner, 1999).

According to this theory, PE could have been affected, since the usual pedagogical approach of PE cannot be fully addressed as there are limitations in relation to physical contact and the use of the mask. The use of masks, in addition to being a barrier to breathing, limits facial expressions, communication and social identity, key aspects of the subject that directly affect the affirmation of personality, self-esteem and relationships with others (Røset et al., 2020). For this reason, it is essential that PE teachers go beyond the mere instruction of curricular content, analysing the diversity of variables that directly influence students. Fears, insecurities and the questioning of their own identity could be exacerbated in this pandemic situation, which is why schools, today more than ever, have to be a place where inclusion, acceptance and empathy take on a value of great significance above any political ideal (Jones, 2020).

If it is assumed that PE is a key subject to achieve overall human development, research in this field is essential when the use of the body's interaction and expression is clearly limited, as it is the case. Therefore, the aim of this research is to analyse the emotional tensions experienced by PE students in the setting of COVID-19 under the theory of emotional contagion (Hatfield et al., 1993). This is a clear contribution to the existing literature, since until now no research has been found on how the COVID-19 situation affects their emotions, and consequently the way in which they learn and experience PE.

### 1.2. What could be the consequences of teaching PE in the Spanish context within the COVID-19 situation?

PE is one of the curricular subjects that has been most affected by COVID-19, as the measures adopted have directly affected its planning, structure and teaching process (Howley, 2021; Authors, 2021). One of the main challenges is to continue teaching through movement, maintaining the fundamental aims of social cohesion and cultural acceptance (Griminger-Seidensticker & Möhwald, 2020). Variables such as the way in which groupings are made, the material to be used, the organisation of spaces and the way in which students interact with each other all have an important impact on the how students experience the subject from an emotional perspective (Petsos & Gorozidis, 2020). However, all these adaptations are meaningless if the fundamental agent of the teaching process, the student, is not intentionally addressed. It is essential to ask ourselves questions such as: How do students experience this new reality? What does it mean for them on an emotional level?

There are three lines of action into which changes in the emotional implications of Spanish students in PE can be classified. Firstly, the restriction of physical contact when practising physical

activities. Beyond the limitation that this implies in terms of content teaching, maintaining distance implies a clear loss of social relations, understanding that the partner can be a risk for contagion. This is a clear contradiction with the pedagogical aims that have always underpinned the subject, in which physical contact, independently of the instructional model used, is the main means of generating cooperation, affection and empathy with others (Zach et al., 2020). Secondly, the use of the mask has a double effect. On the one hand, it limits breathing capacity when doing physical activity of a certain intensity. On the other hand, and perhaps most importantly in terms of the emotional environment, it hides half of the face, largely limiting communication possibilities. This is especially important, since the pedagogical and educational aspect of the subject has always defended the expressive aspects of the body, and not only those related to sport and health, as essential within the subject (Coulter & Ní Chróinín, 2013). Thirdly, intensive hygiene measures have led to a change in the internal organisation of the subject. Constant hand disinfection and the use of individualized and personal equipment are only some of the measures that continue to encourage individualisation over and above the social bond. This type of action inherently might cause irremediable fear among students, which could lead to less involvement in the tasks in question.

Approaching this situation from a reflective and critical perspective could open up a new teaching approach on how to conceive PE from a perspective that does not deteriorate students' confidence in others, self-esteem, enjoyment and learning. To do so, several questions should be considered among researchers and practitioners. How do all these restrictions affect them on an emotional level? What can we do about it? What seems obvious is that it becomes necessary to redefine PE aims taking into account the pedagogical tensions that already exist (Croston & Hills, 2017). To do so, an emotional analysis of the internal experiences of the students must be carried out.

## 2. Materials and methods

### 2.1. Design and procedure

Emotions are likely to be studied in specific sociocultural contexts. Thus, in this study, the researchers understand emotions as part of a dynamic, continuously fluctuating system of meaningful experiences. For this purpose, the study uses a retrospective design of a phenomenological nature, based on the understanding of educational phenomena from the analysis of the participants' experiences and discourses (Mertens, 2005). The research was structured in four well-differentiated phases:

Phase 1. Establishment of the need for research and the action protocol: the study arises after an in-depth analysis of the need to address how the COVID-19 situation affects emotions in PE students. The usefulness and contribution of the research was confirmed, defining the phases of the research and the schedule to be carried out. PE teachers were contacted, the appropriate permissions were requested and the framework for action was established.

Phase 2. Preparation and use of the researchers' logbooks: the researchers, based on the purposes of the research, established the structure of the logbooks, agreeing on guidelines for their completion in each of the sessions over the weeks. The researchers maintained continuous contact throughout the 10 weeks that were recorded. In order to better understand the meaning of the students' experiences, it was planned that the interpretations of these logbooks would be triangulated with the information obtained in the discussion groups described below.

Phase 3. Preparation of the discussion group with the students: this was carried out at the end of the 10 weeks of classes recorded

with the journals. They were carried out on-line, recording the three sessions for subsequent analysis and transcription. The families of the students were informed, confirming that the data would be analysed anonymously and exclusively for research purposes. All the students agreed to participate. Students were encouraged to participate as much as possible in each of the questions, explaining their emotions in detail in order to achieve a reflexive conversation in a relaxed atmosphere (Anyan, 2013). These data helped ensure better interpretation of the logbook observations.

Phase 4. Analysis of all the data by the researchers: after the data were collected from the researchers' journals and the discussion groups with the students, they were transcribed and analysed with the text analysis software WeftQDA.

It should be noted that the main objective of the research focuses on interpreting the meaning of the experience that has occurred within the particular setting of the pandemic, and not on comparing it with previous experiences. However, as is usual in qualitative studies, prior sociometric information was obtained from the participants, all of whom showed a high motivation towards PE. This helped the researchers to avoid any bias derived from negative experiences that the participants might have had before.

### 2.2. Features of PE in the COVID-19 situation analysed

In this particular study, the characteristics of the PE sessions analysed reflect the general educational framework established in the Spanish context to prevent COVID-19. The imposed limitations that affect PE lessons in Spain during the 2020/2021 academic year, when the subject is being taught entirely through on-site attendance, are: (1) minimum social distancing of 1.5 m; (2) mandatory hand washing using hydroalcoholic gel before and after each session; (3) use of face masks; (3) limitations in the use of materials and equipment, favouring individual use or cleaning it with a hydroalcoholic solution when individual use is not possible; (4) prevention of the use of communal changing rooms and showers; and (5) maintaining social contact only with students from the same group throughout the school day.

Three didactic units per secondary school were analysed during the first term of the 2020-21 academic year. Throughout all of them, a great variety of curricular contents were worked on, such as: capoeira, floorball and body expression in the first secondary school; basketball, fitness and badminton in the second school; and football, handball and shuttle-ball in the third one. In relation to the three different teachers of the studied groups (2 female and 1 male), all of them have more than 20 years of experience as PE teachers in secondary education, and they have all been teaching PE at the same school for over five years. In addition, they have taught the students analysed prior to the COVID-19 situation, so they were perfectly aware of the students' behaviour in ordinary PE lessons.

### 2.3. Participants

Twenty-four students (13 male and 11 female) aged 14–15 years participated in this study. They belonged to three different state schools (8 students from each school). These schools were located in three different cities in Spain. The schools had similar characteristics in terms of the number and type of students and the average socio-economic level of the families living in the area. The researchers contacted the PE teachers of these students. All participating students were part of the same academic grade. From these classes, and based on the students' willingness to participate, eight students from each class were randomly selected to carry out the three discussion groups. Regarding the participants' main features: a) all the participants were in the final years of secondary

education, which guaranteed greater autonomy and educational experience; b) they had not had previous bad experiences in PE, which allowed their experiences to be analysed without any influence in relation to this new COVID-19 situation; and c) there was no previous link with the researchers, thus guaranteeing that their actions and responses were totally free.

#### 2.4. Instruments

Two instruments were used to collect information. The questions that make up each of the instruments used have been structured on the basis of the study categories, thus obtaining greater specificity and understanding of the results obtained (Scott, 2004).

Researchers' logbooks: the researchers used a class register logbook for each of the three groups (three logbooks). These journals, which were weekly, were implemented in the first term of the 2020–2021 school year. A total of 10 weeks were recorded, i.e. 20 classes. The researchers acted as external observers, analysing the behaviours, performances and interactions of the class members. This type of journal is ideal for encouraging reflection on the pedagogical role that students play in the classroom (González-Calvo et al., 2019). The journals were semi-structured so that the researchers could make whatever notes they considered appropriate (Slotnick & Anesick, 2011). Relations between the researchers and PE teachers were constant throughout the research, especially in terms of organisational aspects. To guarantee that the researchers did not influence the development of the classes and the attitude of the students, it was ensured that throughout the sessions there was no direct interaction between the researcher and the teachers and students. Likewise, there was no interference with the programming of content that the teachers had established, so that the classes developed in the most natural way possible. The journals were structured around three areas closely related to the aims of the research, allowing us to obtain the kind of information we were looking for. Within each area, different questions were established so that researchers could gather as much information as possible. The structure of the logbook had a double entry, where the observed facts were recorded in one column and the interpretations of the observed facts in the other. To support plausible interpretations, the observation inputs were interpreted in the analysis process by triangulating the information obtained through the discussion groups. In this way, the researchers could analyse each event in depth, contextualizing it both specifically and globally within each of the sessions.

Discussion Group with the students: a discussion group was held with each of the three groups of students. They were held at the end of the 10 weeks of classes recorded with the journals. Microsoft Teams was the platform chosen to hold the discussion groups. Each one lasted 90 min and was recorded for later analysis. The questions that were asked are clearly in line with the study objectives [Table 2 near here]. Each question of the script was asked in order, establishing a climate of participatory confidence in which each student intervened at the time they considered appropriate. The researchers moderated the interventions, making sure not to

move on to the next question until all the students had participated in the previous one (Del Rio-Roberts, 2011). This process allowed the researchers to collect information on each of the questions and, later, through the viewing and transcription of the answers, subject them to the relevant triangulation, debugging and saturation techniques together with the researchers' logbooks used (Tortorella et al., 2015). Moreover, the information obtained helped the researchers to support plausible interpretations of the logbooks. The script used presents six questions.

#### 2.5. Analysis

A qualitative approach has been used to analyse how secondary school students experience the reality of COVID-19 in PE according to the theory of emotional contagion. To this end, from an introspective viewpoint, attention is paid to the way in which it has been adapted to aspects such as the use of the mask, use of materials and equipment, physical distancing and relationship with others. In this sense, a double approach is used: a) analysis, from an external position, of the way in which the students experience PE classes in their day-to-day schooling; and b) analysis of their perceptions of what it means emotionally to be a PE student in this new reality. In order to do this, it was essential to analyse the real contexts in which students carry out their educational practice (Halquist & Musanti, 2010). The main source of data is the experiences of those involved in the educational process (Commander & Ward, 2009). Intentionally, attention is paid to a current and socially relevant issue, COVID-19, using the theory of emotional contagion and its implications as the central axis of analysis. This means that the research takes on a greater identity and coherence with qualitative educational approaches (Aydin & Tonbuloglu, 2014). In this way, and from the viewpoint of interpretative models, it is possible to explore the phenomenon being studied in more depth through the participants' reflections (bib\_CMLDR\_2013Carrión-Martínez & Luque De la Rosa, 2013).

Specifically, a content analysis was carried out using a multi-phase approach based on an initial open-coding phase and a subsequent axial coding phase. The procedure was as follows: the researchers coded the information from the researchers' logbooks and discussion groups, searching for meanings related to the objectives and research questions. Initially, the codes were produced through a circle of readings and interpretations by going backwards and forwards through the different datasets. Secondly, refined codes were assigned to the main dimensions related to the research question. Thus, throughout the process the researchers moved from inductive reasoning, when reading and coding the data in an initial open-coding phase, to deductive reasoning in an axial phase that consisted of organizing the codes in relation to the theoretical framework until the final categories were achieved (Flick, 2014). Finally, through the use of cross-matching patterns (Saldaña, 2012), the most significant text extracts in each of the instruments were coded.

To support the trustworthiness of the results in terms of credibility, transferability, confirmability and reliability, the following

**Table 1**  
Main issues that made up the researchers' logbooks.

1. Experiences regarding the use of the mask: Do they wear it all the time? To what extent does it affect their communication? Does it limit their interaction in any way? Do they have any breathing limitations? What are the physical and emotional implications for the student due to the use of the mask?
2. Experiences regarding physical distance: Do they maintain the established distance of 1.5m? How does this distance affect their relationship? Do students feel inhibited when it comes to contacting each other? Is there any perceived physical and emotional frustration at not being able to maintain physical contact with their peers?
3. Social relationships between students: how do they relate in this situation in COVID-19? What kind of interactions take place in the classroom? Are their relationships different from how they were before the pandemic? In what? What kind of verbal and bodily communication do they use? What kind of emotions are manifested in the classroom?

**Table 2**  
Basic script used for discussion groups with students.

In PE classes ...	
1	- What physical and emotional sensations are generated by the use of the mask?
2	- Does wearing a mask make you feel limited, afraid or unsure?
3	- What do you feel when you have to keep a distance of 1.5 m from your colleagues?
4	- Do you think that keeping your distance reduces your emotional involvement in tasks?
5	- Do you think that this situation at COVID-19 has affected your relationships with your colleagues?
6	- How does this situation affect your communication with others? What are the channels you use to communicate with your colleagues?

procedures were adopted (Smith & Sparkes, 2016). In relation to credibility, the data were analysed through a triangulation of the two instruments used in the research, integrating them into the categories of analysis under the approach of the theory of emotional contagion. In this sense, the interpretation of the researchers' logbooks was supported by the content of the discussion groups. In terms of transferability, the phenomenological approach adopted allowed the researchers to understand the meaning of the experience in the specific context, offering a situational interpretation of the results that could be transferred (Smith, 2016). When it comes to confirmability, in addition to the data triangulation, the researchers tried not to skew the interpretation of what the participants said to fit a certain narrative by considering the number of text extracts in addition to the saturation of categories. Finally, reliability was considered since the paper presents enough information to repeat the study in similar conditions.

### 2.6. Ethical considerations

To ensure fidelity and responsible investigation, permission was obtained from the Principal Investigator's University Ethics Committee. The code assigned was YP34.2020. Prior to conducting the focus groups, the researchers contacted the interviewees and their families, obtaining permission and informed consent to participate in the research. The study followed the ethical considerations established by the American Psychological Association's Ethical Principles of Psychologists and Code of Conduct (APA, 2010). Permission was obtained from the schools and from the parents of the students. Before participating in the study, each teacher and student was informed of its purpose. Students were informed of the importance of acting naturally in class and responding to focus group questions as truthfully as possible, ensuring the anonymity and confidentiality of responses.

### 2.7. Description of the categories

Three categories of analysis were generated from the saturation of ideas that coincided in the results obtained: 1) experiences regarding the use of the mask; 2) experiences regarding physical distancing; and 3) social relationships between students. These categories are related to the study objective and focused on the theory of emotional contagion on which it is based, thus respecting the criteria of specificity and coherence that all qualitative research must have (Trainor & Graue, 2014).

- Experiences regarding the use of the mask: aspects related to the way in which the use of the mask conditions and limits their communication, their emotional and physical involvement in the classroom and the fears and insecurities that it transmits to them in PE classes are dealt with.
- Experiences relating to physical distancing: all the information relating to how physical distancing affects students emotionally and the bodily frustrations that this entails in PE classes is included.

- Social relationships between students: information is recorded on how the measures implemented due to COVID-19 affect the way students relate to others, the communication channels they use and how they feel about this new reality.

### 2.8. Codification of data collection instruments

Different acronyms are used to identify the text extracts with the data collection instrument from which they come: RL is used for researchers' logbooks, and DG for discussion group.

## 3. Results

Through the analysis of crossed patterns, the number of resulting literal text extracts is presented, showing the most significant ones and those that coincide (Saldaña, 2012).

### 3.1. Experiences with the use of the mask: (287 text extracts)

This category reflects the difficulty caused by the use of the mask for proper monitoring of the class, as it seemed to limit both the performance of physical activity and communication with students. According to the triangulation of the results obtained from both data sources, it is clear that the students feel a sense of insecurity towards their classmates due to the use of the mask.

The interpretation of the researchers' logbooks reflects how the use of the mask appears to make them constantly uncomfortable throughout the class, largely limiting their follow-up:

"Many of them wear their masks badly; others just pull them down when the teacher is not looking [ ...]". "It is curious to observe how there are other more responsible students who, although they are having difficulty breathing, never take it off". "What is certain is that its use greatly limits their practice of physical activities [ ...]". "Many do not hear the teacher's explanations [ ...], the teacher has to speak up [ ...]". "The limitations are observed at the physiological, sociological and, above all, emotional levels". "They are clearly attached to and inhibited when it comes to playing games or sport activities [ ...]" (RL).

Based on the findings obtained in the discussion groups, the researchers also interpret in their journals how communication, both between students and with the teacher, is impaired. They indicate that on many occasions they do not understand each other, and even avoid each other, leaving their physical involvement in the background:

"Many times, they communicate by gestures". "Social skills are worked on much less, as students know they are not understood, so they avoid it". "On the one hand, they are eager to take off their masks in order to practice in a standard way, but on the other hand, they are afraid to do so because they could become infected [ ...]". "They are observed to be afraid to approach others, a fear that results in disengagement with peers [ ...]. It is sad to observe these situations of mistrust". "What is clear is that their physical involvement is much lower, since emotional expression is clearly

limited". "It is difficult to carry out a physical education class in which there are no smiles or gestures of complicity [ ...]" (RL).

These researchers' interpretations are supported by the students, who stress that the use of the mask, in addition to causing them discomfort and fatigue, generates insecurity and a lack of confidence in their peers. In addition, they question its true usefulness. They say that many of the fears about the spread of COVID-19 come from what adults tell them, not from what they actually feel:

"You get used to it in the end, but it's clear that wearing a mask all the time is a great discomfort". "Apart from the fact that sometimes you feel as if you can't breathe when you wear it for a long time, it's difficult to communicate with others [ ...]". "When you wear a mask, you think everyone can catch it [the virus], so it's very difficult to trust your classmates ... You end up having certain fears about others". "You are no longer really aware of whether it is better to wear it or not [ ...] you wear it because you have been told that you have to". "I really question whether it's actually useful to use it [ ...]". "You end up having a heightened sense of fear of speaking to others or walking away when someone coughs, and you don't really know why" (DG).

### 3.2. Experiences relating to physical distancing (314 extracts)

The results in this category show how students become less involved in activities as contact is restricted. This results in a loss of value of the activities themselves and motivation of the students.

The interpretation of the researchers' journals reflects how there are a variety of day-to-day situations in which students feel the need to get closer but are self-conscious. A certain amount of tension is generated in the classroom, with a diversity of bodily responses to this. Moreover, this tension seems to be contagious among them, with some students reproducing the insecure behaviour of their peers. Their needs clearly clash with the regulatory constraints:

"It is very difficult not to lose the essence of the pedagogical approach of the body when you have to maintain a distance of 1.5 m". "The students need to touch each other [ ...] Often they do it instinctively, sometimes even when the teacher is not looking". "A number of conflicts have been observed involving some students who reproach others for coming too close. They avoid each other, and even speak badly to each other when someone gets too close". "Moreover, this situation is contagious, with students changing their attitude towards rejection when they see others acting in this way". (RL).

The researchers interpret how the students' bodily involvement is drastically reduced by restricting contact. Many of the activities are distorted and lose their essence, generating confusion in many cases. The body is often isolated, resulting in a personal relationship that is practically non-existent. This form of isolation becomes contagious and is reproduced among students, who seem to avoid each other simply because others do so as well:

"Many of the group activities are totally relegated to the background. [ ...]. Sometimes they try to adapt them, but they lose their essence completely because there is no contact". "Contact activities are modified by actions that require other types of communication such as verbal, which is also limited by the use of the mask". "In many moments we observe a class full of individual bodies that barely interact with each other " (RL).

These interpretations are supported by the discussion groups, the findings of which are closely aligned. The students state that keeping their distance in PE classes is something that often makes them lose motivation during activities. They say that everything is

much colder, and that their spontaneity towards practice and towards others is much lower because of the fear induced by not being able to touch others. They admit that this fear is sometimes generated by seeing it in others, adopting behaviours that they did not previously have:

"It is very hard to know that in all PE classes you cannot get close to others [ ...]. In fact, it's a bit incoherent, because in the breaks or in the corridors we are together". "I am demotivated by this situation [ ...] The truth is that physical education classes are not the same". "Sometimes you feel self-conscious, you don't really know what you have to or can do [ ...]. You are afraid to touch others in case something happens [ ...] But that fear comes more from what you are told from outside than from what you really feel". "It's not that I'm afraid to get close to others, but the fears that others have make them rub off on me" (DG).

### 3.3. Social relations between students (303 text extracts)

The results in this category show how dialogue situations in the classroom are very limited. They are mainly based on orders to carry out tasks. This increasingly results in less of a group atmosphere and more limited social relations.

The researchers' journals indicate how communication, both between students and with the teacher, is clearly affected. The time for dialogue is quite short, being limited to orders and corrections by the teacher:

"Reflection and dialogue times are quite short". "Sometimes the teacher tries to get the students to talk and look for proposals and solutions, but it is impossible [ ...]. The teacher chooses to give concrete orders that he or she can control". "This lack of social relations leads to less autonomy for the students, since they ask fewer questions and question less [ ...]. The body is physiologically present, but not so much its more social dimension [ ...]" (RL).

The communications that are observed appear to be forced quite often, using shouting as an all-too-common tool of interaction. Students are often perceived as being overwhelmed, limited and lacking in empathy and affection:

"Communications are not fluid, and shouting is used as an all-too-common resource [ ...]. There are few moments in which the class is compact, paying attention to the same explanation, the same activity". "You see certain students who do not relate or talk to anyone throughout the class". "It is a situation that rubs off on others as the days go by. (RL).

These interpretations of the logbooks are supported by the students' statements, which describe how there is less and less explanation and dialogue in PE classes. They perceive the content as less varied, with less and less understanding, group bonding and learning. The proposals are mainly aimed at individual physical activities. This lack of social interaction is determined by an unfounded fear of getting close to others:

"There may be days in class when I don't talk to anyone directly". "The truth is that I miss those classes in the past where you embraced others, shared things [ ...]. It's a sad situation". "Before, the contents were much more varied, we did different things, you shared much more with your classmates". "Now the classes focus mainly on physical activity". "It is a practice of individual physical activity, without contact with others, in which you have your own personal material to do it. It is almost always the same exercises, so it is usually quite boring". "In the end, you do relate to others in one way or another, but much less so [ ...]. Honestly, I feel lonely many days in class". "Everyone constantly tells you that you can't get close to others, and in the end, unconsciously, you prefer to be alone. You don't really know why you can't touch them, but you stop out of fear". (DG).

#### 4. Discussion

The aim of this research has been to analyse the emotional tensions experienced by PE students in the COVID-19 situation under the theory of emotional contagion (Hatfield et al., 1993). The results have been grouped into three categories of analysis, relating to the use of the mask, physical distancing and the social relationship between students. The results suggest that students are in constant tension in PE, perceiving fear and tension in relation to their peers. According to the theory of emotional contagion, students seem to reproduce socially established discourses and behaviours. In the lessons analysed, despite being in a group, the majority of the students stated that they felt isolated and alone because of the individualized and repetitive fitness content being taught.

This emotional convergence might have led to unconscious fears that transcend the practice of physical activity, reducing the student's reflective component and imposing regulations and restrictions. The emotional tensions might be transmitted in the group, sometimes subconsciously (Cacioppo & Gardner, 1999), biasing the students' personalities and affecting their thoughts and actions as a consequence of the pandemic (Vukovic et al., 2021). This aspect has been considered in the present study, as students' behaviours and perceptions show how the use of the mask and physical distancing lead to a clear limitation of communication and bodily involvement in school. They recognise that in certain cases they do not act as they would really like to in relation to others, but that the limitations imposed on them make them insecure towards their peers, so they prefer to avoid contact. This could be related to the concept of 'haphophobia', the irrational fear of touching and being touched. This fear arises as a defence mechanism in response to a prolonged situation of alarm, exacerbated by the media, which produces psychological and emotional disorders, and stress-related symptoms underlying in the emotional contagion effect.

In relation to the first category of analysis concerning students' experiences with the use of the mask, the results have shown the discomfort of wearing the mask in the course of the classes. This affects both their communication and their physical involvement. As authors such as Simonton and Garn (2019) indicated, based on their applied research under the theory of the value of control of the emotions of achievement, for true learning and involvement of students in PE, as many channels of communication as possible must be addressed, with facial expressions being essential for recognising their emotions. The students in this study recognise that on many occasions, in addition to not understanding each other, they avoid each other, due to the insecurity and lack of confidence that some of their classmates generate. This is a clear limiting factor in student involvement, since learning in PE is clearly determined by the motivational and social climate established in the classroom (Washburn et al., 2020). In relation to the construct of emotional contagion, the students in this research establish that these rejection behaviours are often thoughtless and are influenced by certain media pressures. These pressures, and more so in relation to corporeality, bias (sometimes with clear political and commercial aims) both the behaviour of students in PE classes and that of teachers in relation to their appearance and physical behaviour (Varea et al., 2019).

In relation to the second category concerning physical distancing, the results obtained from both the logbook interpretations and the discussion groups point to situations in which students have the desire to approach each other and make contact, but it is inhibited. In line with previous related studies (Howley, 2021), the analysis highlights how throughout the 10 weeks of the follow-up of the classes the students' physical involvement and interaction are very much reduced. In the pandemic scenario,

contents that can be practised and learned individually are prioritized, while social interaction is diminished in PE (Authors, 2021). This generates a problem that directly attacks the pedagogical essence of the subject, since contact with others favours complicity and the integral development of the students. To this end, it is essential that PE teachers focus on the generation of students' perceived competence, as this correlates significantly with their satisfaction (Kerner et al., 2018). Furthermore, the students stated in the discussion group that knowing that physical distance will be maintained throughout the class often makes them lose motivation. It should be borne in mind that the pedagogical action in PE teaching must revolve around physical experimentation in all its dimensions, one of the keys being to be able to overcome challenges based on relationships with others. Along these lines, Barker and Quennerstedt (2017) emphasise, under the notion of Foucault's power, there are four fundamental aspects that must be taken into account in group work in secondary education: a) the type of tasks required; b) the cultural diversity of the students; c) gender; and d) social interaction. Therefore, it is essential to reduce the "absent body" to the maximum in order to provide as many social corporal experiences as possible.

Regarding the last category of analysis, related to social relationships between students, the 'pandemic has led to widespread adaptations and unprecedented realities in the way teaching and learning in PE is currently being implemented and experienced globally' (Howley, 2021, p. 1). The researchers' logbooks showed how over the 10 weeks analysed, communication and dialogue in the classroom was scarce, being limited to the teacher's instructions and corrections. This aspect seems to be a limiting factor for learning since, as Sinoforoglu and Balçikanli (2020) state, open and dialogic PE classes in which teachers acquire an empathic character with their students lead to greater physical involvement of the student. It is necessary that the students' interactions are approached from a social and emotional level, since when physical activity is associated with reflection, the learning generated is more lasting and transferable over time (Authors, 2021). Moreover, emotional support from peers is also necessary to provide a psychologically safe learning environment for adolescents (Song et al., 2015). The communications that have been observed in the research, apart from not being very fluid, are often based on shouting. In this regard, the students report feeling overwhelmed and lacking in empathy and affection. This context must generate special reflection by PE teachers, since it is precisely in this current situation, which is so complicated and so distant, that close treatment, understanding and dialogue with students must prevail (Howley, 2021). In this sense, studies such as the one by Backman and Barker (2020) highlight the need for PE teachers to rethink teaching content, taking into account both the cultural context of movement and the management of uncertainty that occurs in the classroom. To this end, they highlight four fundamental aspects: a) knowing the technical, tactical and regulatory aspects; b) knowing how to design task progressions; c) knowing how to modify tasks and give feedback to students; and d) assessing the effects of teaching content on students. For this reason, and more so in view of the restrictions related to the pandemic, teachers must rethink their teaching actions in the classroom in order to generate motor experiences in students based on collective achievement, social relations and the promotion of emotions (Howley, 2021).

#### 5. Conclusions

Through this article we reflected on the emotional tensions experienced by PE students within the setting of COVID-19. These tensions, mainly derived from the use of the mask and physical distancing, appear to have a direct impact on fears, insecurities and

loss of confidence towards their peers. Their communication with others and with the teacher is reduced exponentially, being limited to the performance of individual activities. This situation, approached from the theory of emotional contagion, shows how dynamics are established that lead to less physical and social interaction.

This manuscript makes a significant contribution to the existing literature on COVID-19, since until now it had not been approached from the perspective of students' emotions. In addition, their perceptions are contrasted with the monitoring of the classes by the researchers, which gives the study a greater dimension. However, the research has some limitations. Firstly, the study proposes an initial approach to the situation, but it would be advisable to propose a longer-term analysis to obtain more conclusive results. Secondly, the analysis only focused on the theoretical framework of emotional contagion and the implications and dimensions that emerged from the particular setting of the COVID-19 pandemic, so other important aspects may become visible in future research. In this regard, as additional future lines of research, data could be compared with other countries in order to observe similarities in the results.

We believe that this manuscript may be of particular interest to all PE teachers, as it will enable them to reflect on such a significant situation as COVID-19. It will also be of interest to all families and school management teams, as it will enable them to understand the importance, today more than ever, of the PE subject. It is essential to continue research along these lines, as the future of PE will only be guaranteed if actions in response to the COVID-19 pandemic are structured on the basis of solid educational principles.

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