

Fears, insecurities and questioning of professional identity of future physical education teachers during the Covid-19 pandemic

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Abstract

In this paper, we aim to analyse the possible fears and insecurities produced by Covid-19 and its possible influence on the reconstruction of the professional identity of future physical education (PE) teachers in primary education. Following the theoretical construct of chaos theory, a qualitative methodology was employed, using discussion groups and reflective journals as data collection instruments.

The results show how teacher training students are uncertain about their professional future, questioning whether they will be able to apply the PE they have learned. They perceive the elimination of physical contact and the use of shared spaces and equipment as the main problems to be faced by teachers in the future.

Keywords: physical education; Covid-19; initial teacher training; teacher insecurity; professional identity.

Introduction

The situation experienced as a consequence of Covid-19 has meant educational changes of enormous importance (Sá and Serpa, 2020). It has led to the implementation of protocols that, unexpectedly, have substantially modified both the way of teaching and the way of communicating with students and families. This situation, due to the temporary uncertainty in which it is framed, makes it necessary to rethink education and, particularly, PE (Author 2). A subject in which the pedagogical treatment of the physical is the central objective of its curricular foundation, has been clearly altered by a situation of physical confinement and distance, where, in addition, not all students have been able to access online teaching (Morgan, 2020). For this reason, it is essential to rethink the methodological approaches that should structure the subject in this new normality, so that its pedagogical purposes are altered as little as possible and the motivational climate inherent to it is maintained (Morgan, 2019). In effect, in this first empirical study, we take an exploratory approach to the analysis of the fears and insecurities produced by Covid-19 and its possible influence on the reconstruction of the professional identity of future PE teachers. It is from this relationship that the present manuscript is articulated, with three important constructs: (i) physical education in times of Covid-19; (ii) the reconstruction of professional identity in the face of this new reality, and (iii) pedagogical chaos established by the pandemic (which produces fears and insecurities).

Importance of reconsidering physical education in times of COVID-19.

PE has always been associated with the pedagogical treatment of the body, there being a fundamental social base among the students that allows the generation of positive shared experiences which, above all, allows the most disengaged students to be re-engaged (Gray, Treacy and Hall, 2019). These experiences are produced through the use of motor skills as a learning tool, where dialogue, reflection and cooperation become essential to achieve collective achievements in a variety of contexts (Stuhr et al., 2015). For this, contact between students is essential, assuming the existence of face-to-face activities in the classroom as natural and necessary. This contact is justified both by the content itself and by sharing a diversity of spaces and equipment. However, the most worrying aspect of this situation is the pedagogical questioning that it implies for teachers, who must radically modify long-established patterns of action, thus working on physical literacy (Durden-Myers and Keegan, 2019). It is often the case that the initial training that teachers have received does not connect with the reality of the school environment they are facing, which is a major pressure and challenge. This is why the needs of beginning teachers as professionals have to be considered as part of the dialogue in PE programmes (MacPhail and Tannehill, 2012).

For this reason, pedagogical models such as cooperative learning are very limited, giving priority to individual and physical fitness activities over any others. No one doubts how important PE continues to be in light of the Covid-19 situation (Author 2), but what is also undeniable is that it cannot be understood or approached in the same way.

In this respect, if generating learning and adherence in students towards the practice of physical activity (transcontextuality) is one of the main purposes of the subject (Barkoukis et al., 2010), it is necessary to analyse how this can be guaranteed when autonomy, perceived competence and social relationships are clearly questioned. Another aspect that cannot be overlooked is the behavioural changes involved in constant hygiene protocols, as well as the use of masks. Their daily use can have psychological consequences at school, as they subconsciously send the message that the partner presents the risk of infection, thus altering the establishment of a social climate of integrity and trust. Therefore, with the use of masks, without the possibility of contact, and with the constant disinfection of hands and equipment, the subject could be dehumanised and the use of the body could be instrumentalised, which represents a high risk for PE and for the concept of health associated with it (Tinning, 2015). This can lead to something as alarming as the emotions associated with corporeality taking a back seat, with the physiological level being more important than the social, motivational and learning levels. If this happens, the integration of the subject will be quite diminished, causing greater exclusion both in relation to the type of skill and to gender (Gruno and Gibbons, 2016).

In the face of all this uncertainty, a series of questions arises: What role does PE play now? How can PE teachers adapt to a reality that substantially modifies the way of understanding the subject? Should one continue to believe in the same pedagogical principles that have supported the subject up to now? There are many questions to which we do not have a fixed answer due to the high level of uncertainty but which, without doubt, must be addressed from the point of view of teacher training. PE cannot survive only as a justification and tool to prevent sedentarism, and this is a vision that is gaining more and more strength in political spheres. It is a dangerous facet imposed on diverse educational curricula, when it has been demonstrated that students' most significant learning experiences come when they participate in the development of the curriculum (Walseth, Engebretsen and Elvebakk, 2018). This is exacerbated by the situation caused by Covid-19, where even PE practice spaces such as gymnasiums and sports halls have been converted into regular classrooms. If this situation persists, and if the teaching staff of the school does not act in time, the curricular and legislative impositions may bring school, as we know it today, to an end. Therefore, teacher training, especially initial training, must be especially reinforced and attended to, assimilating chaos, insecurities and uncertainties as part of professional development. Using this approach, the situation of Covid-19 has to be seen as an opportunity for personal and professional growth. In this respect, (Tannehill and MacPhail, 2014) establish metaphors as a fundamental resource to help future teachers recognise their experiences and beliefs as well as identify alternative ways of thinking about teaching and learning.

Professional identity of future teachers

Traditionally, teacher training is resolutely oriented towards professional practice. In fact, higher education institutions address the challenge of contributing to the training of future teachers. Likewise, future teachers are prepared and educated for professional practice, but it is necessary work on the present, considering their training and expertise built up in their professional practice. For this reason, teacher training constitutes a complex process which future teachers incorporate into their specialised knowledge. Therefore, this initial training is crucial for their professional identify (Ferry, 2018).

As we have seen before, among these necessary processes of reflection and progress, teacher training becomes essential, specifically their initial training is even more important, since it allows the pillars of the PE of the future to be built on the basis of personal and social responsibility (Shiver, Richards and Hemphill, 2020; Author 2). However, the situation is extremely delicate, since future teachers in school are faced with a professional reality that they are not aware of. They have been trained in a classroom-based subject, where physical contact and socialisation are essential elements of their intervention (Ferry, 2018). This causes a "training gap" between theory and practice that has to be addressed purposefully from the university environment. This seems to be an ideal moment to work on the reconstruction of the professional identity of future teachers, proposing alternatives that allow them to approach the subject with guarantees, motivation and full conviction. This uncertainty around the global concept of education must be approached from reflective postulates that try to normalise teaching insecurities. Initial training of PE teachers is essential, as it determines how the subject will be approached in the future. In fact, the quality of this training influences the ability or experience to transfer it to school. On certain occasions, this generates controversy and difficulties in connecting with the reality of schools. In relation to such a crucial aspect as assessment, applying self- and peer-assessment processes to improve learning is not always easy, due in part to the lack of structure and the need for time to implement them (Macken, MacPhail & Calderon, 2020). This situation of "disconnection" is even more relevant in the current situation, which is so changeable and full of uncertainties. For this reason, it is essential to encourage reflection and constant questioning by future physical education teachers, allowing them to break with certain existing dogmas regarding the body. Using this approach to the complexity of teaching, it is more accurate and useful to apply conceptual frameworks of a non-linear nature, as they can better help future

physical education teachers to study their own practice and encourage more complex conceptualisations of teaching and learning (Hordvik, MacPhail and Ronglan, 2019). This is where Chaos Theory comes in (Adams and Russ, 1992; Jones, 1994), which tries to understand the non-linear processes of learning through the explanation of events that are impossible to predict.

Order and disorder. Chaos theory.

Applying chaos theory to education provides a major opportunity for changing a stable linear process like learning. The theory seeks to reformulate scientific knowledge, trying to shed light on uncertainty. Therefore, faced with the complex situation caused by Covid-19, the teacher has to confer relevance on their professional identity. As Macpherson (1995) states, order is a consequence of chaos and chaos makes order possible in constant alternation.

Education, as the social phenomenon that it is, cannot be maintained on the basis of ordered configurations, since all educational order is the result of a previous chaotic situation. Accordingly, chaos theory is intimately linked to the uncertainty principle and the phenomenon of complexity. It is thus essential to understand the current situation of Covid-19 as an opportunity to reflect on and redirect current educational concepts and approaches, with PE being a multi-faceted subject with an infinite number of options. In this respect, imagine how a teacher would need to respond to a critical situation over the course of one session as quickly as possible in order to avoid an unexpected consequence. Similarly, the sudden appearance of a dispute between two students would require a rapid response from a teacher to avoid accidental repercussions. These examples emphasise the importance of maintaining order in class during the school day in order to keep performance at its best and/or to avoid any type of incidents. However, in light of the above, Chaos Theory will accept the disorder, uncertainty and constant innovation (Kelso & Ding, 1993). Therefore, this unfortunate consequence (COVID-19) is presented as a great opportunity for evolution in two important facets: i) Social aspects, and ii) educational aspects (David, Handford & Williams, 1994). In fact, the situation provides a change of paradigm and presents us with a great opportunity to build a new social and educational future.

In sum, taking into account the three important constructs that organise the present work, and with the need to reflect on and restructure educational processes caused by COVID-19, it is essential to carry out research that gives a voice to future PE teachers to check what their insecurities are regarding their professional future, as there is evidence of their influence. This is particularly relevant in view of the fact that future teachers have no experience which could allow them to change their future behaviours in the classroom. In fact, the uncertainty and chaos caused by this health pandemic could provoke greater pedagogical application. In addition, the application of constructivist strategies such as problem solving, group discussions and critical friends is fundamental, as they allow future teachers to move from feelings of fear and apprehension to confidence in their own development (MacPhail, Tannehill and Karp, 2013). To summarise, the aim of the present paper was to analyse possible fears, insecurities and the influence of Covid-19 on the reconstruction of the professional identity of future teachers in the classroom (Varea, González-Calvo & García Monge, 2020). This represents a significant contribution to the existing literature on the subject, since there is currently no research linking initial teacher training in the classroom with Covid-19 from the perspective of uncertainty and the reconstruction of professional identity.

Material and Methods: contextualisation of the qualitative approach used

Participants and data collection

Twenty-four students (16 women and 8 men, with an average age of 20.48±1.96 years) in the final year of the PE Teacher Training Course participated in this study. The sampling was intentional, as they were all part of the same class. The reason for the choice of these participants was their advanced level in the training received, as they were in the last semester of their degree. This allowed them to evaluate more accurately the knowledge they had acquired for their future professional career. All of them were studying for the Primary Education Degree at a Spanish university. This degree integrates the specialty in PE, specifically with five subjects of 6 ECTS credits each, taken in the third and fourth years: 1- Educational games; 2- Inclusive physical education; 3- Pedagogical models in physical education; 4- Artistic and expressive physical activities; and 5- Sports initiation. All the subjects are approached from the pedagogical vision of the treatment of the body in school physical education. At the time of the research, the students were taking the subject Pedagogical Models in Physical Education. The first part of this subject was taken in person (only two weeks) and the second part online, due to the confinement, which was total, due to the high number of infections that had occurred, and it was forbidden to leave the house, except for justified everyday situations.

Two different instruments (data collection techniques) were used for the collection of information. The questions that were asked in each data collection technique had been structured on the basis of the three categories of the study, obtaining greater specificity of the data (Scott, 2004).

Reflective Student Diaries: Each of the 24 students completed a reflective narrative journal throughout the second semester of the 19-20 school year (16 weeks of teaching). This diary was filled out weekly, in order to record their reflections throughout the confinement due to COVID-19. This diary was of a compulsory nature,

and was closely related to the theoretical-practical aspects addressed in the course. This type of journal is ideal for future PE teachers to think about their professional identity (Author 2). The journals had a semi-structured character, in order to grant freedom in the reflections of each participant (Slotnick and Janesick, 2011). The students, if necessary, had access to the advice of their university professors at all times, so that the information provided would meet the objectives with which the instrument was designed (Smith and Zajda, 2018). The journal was made up of three questions, closely related to the purposes of the research (Table 1).

Table 1. Issues in the students' reflective journals.

<ol style="list-style-type: none"> 1. What do you think the future of physical education will be like due to COVID 19? What are your perceptions as a future teacher? (Fears, insecurities, curricular role of the subject...). 2. To what extent can the knowledge you have acquired throughout your career be applicable to this new situation (resources for on-line physical education, treatment of the body, physical contact...). 3. Do you think you should modify your understanding of physical education? (Methodological strategies, communication with students, evaluation...).
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Discussion groups: Two discussion groups were held at the end of the course (20 June). The main reason was to divide the whole class into two groups of 12 students each, thus respecting the reliability of this data collection instrument (Chioncel et al., 2003). Another option could have been to have three groups of 8 students each. In any case, the interaction of each student was encouraged, ensuring maximum participation in all questions. Due to the confinement situation, both were conducted online through Microsoft Teams on alternate days, lasted 90 minutes each, and were recorded for later analysis. The questions asked were clearly in line with the objectives of the study and the categories of analysis (Table 2). Each question in the script was asked in order, establishing a climate of participatory trust in which each student intervened when they considered it appropriate. The researcher moderated the interventions, making sure not to move on to the next question until all participants had participated in the previous one (Del Rio-Roberts, 2011). This process allowed the researchers to collect the necessary information on each of the questions and subsequently subject them to the techniques of triangulation, debugging and saturation with other data collection instruments (Tortorella, Viana and Fettermann, 2015).

Table 2. Basic script used for student discussion groups

<ol style="list-style-type: none"> 1- Do you have fears and uncertainties about the future of physical education? What are they? 2- How do you plan to face these fears? Have you thought of any kind of strategies to adapt to this new situation? 3- Do you think that what you have learned throughout your studies will be useful to you in order to face online physical education? 4- What resources do you think are the most transferable and relevant for teaching physical education to children? 5- As future physical education teachers, do you think that you should modify any aspect of your professional identity?
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Design and procedure

The study responds to a phenomenological design, based on the understanding of educational phenomena from the analysis of the experiences and discourse of the participants (Mertens, 2005). The research was structured in four well-differentiated phases. These phases were established in order to understand the process carried out throughout the research. All of them were integrated within the second semester of the 19-20 academic year, which is the last semester that the participants take to finish their studies. The intervention carried out was based on analysing, as part of the subject (Pedagogical Models in Physical Education), how the contents addressed could be applied in the current COVID-19 situation. All the classes were taught using Teams. To this end, in each of the classes, reflections were established along these lines, with the aim of seeking real adaptations that they would have to develop in their immediate professional future. This treatment of the contents, from a theoretical-practical point of view, was directly linked to the completion of their reflective diaries (See Figure 1, for more information).

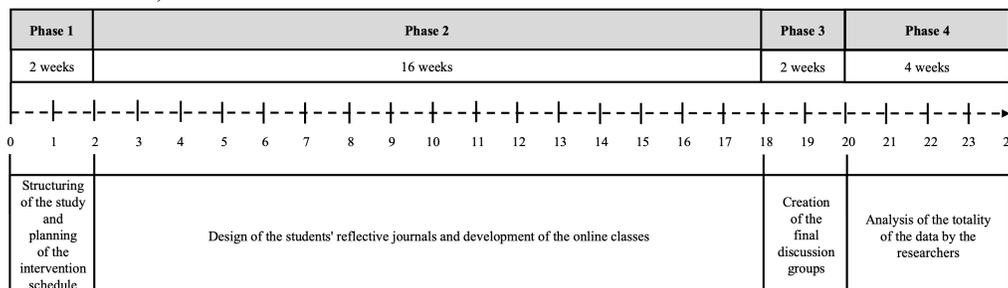


Figure 1. Schematic representation of the intervention (see text for full description).

Phase 1. Structuring of the study and planning of the intervention schedule (2 weeks): the study arose from the situation of the state of alarm and confinement produced by the Covid-19 pandemic. The classes began to be developed online, so this was considered to be a good opportunity to see how future PE teachers faced this new situation. Only two weeks of the semester had passed, so the intervention period was long enough to generate the necessary reflection in the future teachers. This phase defined the way in which the classes would be taught, and how this online teaching with the students (a few months away from finishing their university studies) allowed them to reflect on the situation of COVID-19 and the construction of their professional identity. The usefulness and contribution of the research, in which, through a qualitative approach, the fears and insecurities of future PE teachers in the face of the situation of the Covid-19, were analysed, were verified. To confer transparency on the investigation all the participants in the research were informed from the beginning.

Phase 2. Design of the students' reflective journals and development of the online classes (16 weeks): the researchers established the questions that were to be dealt with in the journals and provided them to the students. The aims of the research were explained to them, highlighting the importance of the creation of journals for both the subjects and their training. The students had to fill in the diaries on a weekly basis, taking into account the contents taught in the subject and the evolution of the situation of Covid-19, using the subjects' online classes for this purpose. These journals were delivered by each student to the teacher at the end of the course. It was emphasised to them that the results would only be used for research, in no way affecting the grades given for the subject.

Phase 3. Creation of the final discussion groups (2 weeks): the discussion group with the students was held after the second semester of the academic year (June 2020), online, one week after the end of classes, and the session was recorded on video for later analysis. It was guaranteed that the data would be used exclusively for research purposes. It lasted approximately 90 minutes, and we sought to delve more deeply into the theme of the study in order to reach a reflexive conversation in a relaxed atmosphere (Anyan, 2013).

Phase 4. Analysis of the totality of the data by the researchers (4 weeks): after the collection of data from each of the instruments used, these were transcribed and inserted into the text analysis computer programme for analysis. These reflections made it possible to analyse to what extent the results obtained were in connection with the research objectives and the intended contribution.

Permission was obtained from the principal researcher's university ethics committee to initiate the research. The participants were clearly informed of the purposes of the research, and encouraged to answer the questions as truthfully as possible, guaranteeing anonymity and confidentiality. The students had the right to withdraw from the research at any time if they felt it was appropriate.

Data analysis

A qualitative approach was used to gain an in-depth understanding of the fears and insecurities of future PE teachers in the face of COVID-19. For this purpose, it was essential to analyse in depth the way in which they lived through the confinement and the way in which they connected their university education with their professional identity (Halquist and Musanti, 2010). The main source of data was the perceptions and reflections of those involved in the educational process (Commander and Ward, 2009). This allowed us to reflect on the phenomenon of study and how the perceptions of the participants influence the very purposes of intervention, focusing mainly on interpretative models (Carrión-Martínez and De la Rosa, 2013). A triangulation was carried out between the information obtained from the data collection instruments, which allows for a multidimensional analysis of the research approach (Oliver-Hoyo and Allen, 2006). In addition, there is a high cultural and social component around the same theme, the Covid-19 pandemic, which gives more identity and coherence to the qualitative educational approaches (Aydin and Tonbuloglu, 2014). In order to guarantee the reliability, transferability and credibility of the results, the most significant text extracts were codified in each of the instruments, using cross matching patterns (Saldaña, 2009). All the information was articulated through the grouping in thematic axes in relation to the categories of the study, by means of selective, open and axial coding. Therefore, the analysis was structured on the basis of the relationship between the research objectives and the data collection instruments. The researchers ensured that data were proportionate and equitable for each of the collection techniques used. After the information was collected, it was transcribed and assigned to different thematic axes, and then linked to the categories of analysis. These thematic axes emerged from the saturation of the most recurrent and coincidental results. From here, and after a thorough review by the researchers, the most matching text extracts were searched for using the computer software WeftQDA.

Generation of categories and their categorisation

Once the data from each instrument used was transcribed, it was inserted into the WEFT QDA computer and analysis program. Through the saturation of texts and coinciding ideas and the treatment of thematic axes, the information was grouped into the three initial categories of the study: a) fears and insecurities about the future of the PE; b) perception of the usefulness of what was learned during their studies; c) reconstruction of professional identity. These categories are common to both data collection instruments and are used to reliably structure the analysis of results. They are related to the objective of study according to the

context, thus respecting the criteria of specificity and coherence that any qualitative research must have (Trainor and Graue, 2014).

- *Fears and insecurities about the future of PE*: aspects related to the uncertainties of the future of PE to exercise the profession in the face of Covid-19 were addressed.

- *Perception of the usefulness of what is learned in university*: all the information related to the possible transferability of the university training acquired from the future PE teachers in the situation of Covid-19 was included.

- *Reconstruction of professional identity*: information obtained on all the aspects that influence the way in which future PE teachers have to readapt their understanding and approach to the subject of physical education was recorded.

Coding of data collection instruments

Different acronyms are used to identify the text extracts with the data collection instrument from which they come. (RJ) is used in relation to reflective journals, the acronym (DG) is used regarding the discussion group.

Results

All the information extracted from the two data collection instruments was grouped into the three categories of the study. The number of resulting literal text extracts is presented through the analysis of crossed patterns, showing the most significant and coinciding ones (Saldaña, 2009).

Fears and insecurities about the future of PE: (287 text extracts)

Future PE teachers have many uncertainties about their professional future. They perceive the elimination of body contact as one of the main problems to teaching the subject with guarantees:

"Student have quite a few fears about the future of PE. In fact, they show concern about the elimination of body contact as this hinders their teaching".

Another aspect that generates insecurity for future PE teachers is the elimination of equipment and shared spaces:

"Many of the contents we have seen in the subject are developed in shared spaces and with various shared equipment. However, in the current COVID-19 situation individual behaviours are promoted that are very dangerous for future attitudes, as they break with the essence of the pedagogical treatment of the body from its most social vision".

Other aspects that stand out are the emotional problems involved in the use of masks by the children:

"We've normalised the use of masks, but I honestly think it's something that hurts us as a society and has limited their ability to express emotions. In this respect, we are generating a fear in them towards others, emphasising that if they get close to their peers, they can get infected".

One of the things that worries them most is the uncertainty regarding how long this situation will last, with the consequences that this has for PE:

"Future PE teachers expressed the uncertainty caused by this pandemic situation, mainly for the duration and termination of Covid 19. In PE where body contact with others is so fundamental, the consequences can be serious. In addition, future PE teachers are concerned because schools have gone from having close to three hours of PE a week to it probably disappearing from the curriculum over time".

Perception of the usefulness of what was learned in the course of the degree (298 text extracts)

They show great difficulty in being able to put into practice at school many of the things they have learned, questioning whether they will be able to teach the subject with guarantees:

"Future PE teachers don't know if they will be able to teach the subject as they conceive it or learned it throughout their training. Teachers demonstrate their concern to apply combat sports like Judo at school. In this context, it should be noted that they had experienced how important strategy games are, where contact and sharing of spaces is key".

In this respect, they express some concerns about the possibility of applying certain pedagogical models, such as cooperative learning:

"We have always been told the importance of physical contact, joint reflection and shared spaces in order to implement cooperative learning in the classroom, but... how can we do it in this situation?" In addition, a large part of the content we have learned is worked on through cooperative learning, and with this situation I see it as very complicated to be able to apply it."

In connection with the above, they perceive as one of the main teaching options to apply individual work, mainly on physical conditioning:

"All of these latter participants believe that with the situation of Covid-19 all the work has to be focused on an individual basis, with the disadvantage that this entails. In this sense, future PE teachers cannot work in groups and with body contact; a lot of content based on play or body expression is impossible to do",

This situation of Covid-19 makes them rethink the way to teach PE, as they have uncertainties about its pedagogical treatment:

"It is clear that the subject will not be able to be taught in the same way as before. Therefore, if now the work is going to be more individual than group, there is a risk that the pedagogical scope of the subject will be lost. Accordingly, if group work and contact is limited, the subject will be more directed towards performance than towards participation and learning"

Because of all this, they consider that PE is going to be undervalued in schools, remaining in the background:

"In this regard, future PE teachers consider that PE is going to be harmed, benefitting other subjects with less uncertainty such as language and mathematics. Thus, health and education authorities are already talking about transforming gyms and sports facilities into classrooms. Therefore, they demonstrate their displeasure about the use of their classroom"

(Re)construction of the professional identity (301 text extracts).

These future PE teachers believe that it is essential to adapt to this new situation, but that in no case should the vision of the subject be changed:

"There is no doubt that this pandemic situation requires changes on the part of PE teachers, but the pedagogical vision of the subject should not be changed. Thus, the differences between PE and physical activity must be made very clear, especially in this situation of COVID-19".

They consider that it is necessary to reflect in depth about the kind of contents that needs to be taught, as well as the way to do it:

"Currently, PE teachers consider this moment to be good to structure from the beginning the way of acting and contents that are the most suitable to teach. In summary, if the principles of PE are clear, adapting the contents to be taught is not so complex".

In this respect, they highlight that it is an ideal moment to redefine the aims of the course:

"Now is a critical time to reclaim the importance of the subject in the curriculum. Accordingly, with confinement, students have become less physically active than ever before, and this is fundamental for their interaction and development. Consequently, it is important to generate adherence to the practice of physical activity in students, so that they are able to do so autonomously when we are not there"

They also stress that the adaptations made to the subject must be linked to learning:

"It seems that all that matters now is for children to be physically active and to train, and that can make them forget the most important thing like adherence, values, and team work among others. Future PE teachers show interest and concern about the subject, mainly that we consider it important to be respected and valued, and that we have to make it clear in this situation of COVID-19, what we are contributing to the child's learning".

Discussion

The aim of the study was to analyse the possible fears and insecurities produced by Covid-19 and its possible influence on the reconstruction of the professional identity of future PE teachers in primary education. The results reflect the great diversity existing in the fears they express, questioning whether they will be able to truly apply what they have been taught at university in the future. In order to do so, they believe that they will have to reconstruct their professional identity, always taking into account the pedagogical approach of the subject and the learning that has to be derived from it

First, in relation to the importance of physical education in times of COVID 19, it has to be recognised that the limitations of body contact and the use of shared spaces and equipment generate the main insecurities. On the one hand, as indicated by Caldeborg, Maivorsdotter and Öhman (2019), body contact must be re-signified in the subject of PE, understanding it as the best way to naturalise social relations among students, and to this end, didactic contracts can be used. On the other hand, the good use of spaces and equipment is a key factor to determine learning in PE, and for this reason the teacher must know how to structure and organise in order to better understand their professional development (Brooks and Thompson, 2015). In this regard PE, a subject characterised by movement and face-to-face instruction, can be seen to be disturbed by the new situation of Covid-19 (Varea, González-Calvo & García Monge, 2020). In addition, the spaces and equipment play a fundamental role when it comes to being used respecting physical distance.

Mention must be made of the future PE teachers stating that there is a diversity of content that they see as impossible to apply with COVID-19, as well as some pedagogical models such as cooperative learning. This seems to be a significant problem, even more so when one of the purposes of initial teacher training, and more so in PE, is the transferability of what is learned to the school and to a diversity of contexts (Pascual, 2006). Furthermore, cooperative learning is constituted as a pedagogical model that is transversal to any content, so that its non-use may lead to the approach of the subject from a more individualistic perspective, with a direct effect on the behaviour of the students (Author 1). In this regard, the results of the study have reflected how future teachers believe that it is necessary to reinforce the image of the subject from its pedagogical aspect, since otherwise there is a risk that schools will end up dispensing with it due to Covid-19. The results have also reflected the fears of future teachers regarding the continuous use of masks, especially at the emotional level. As stated by Canales-Lacruz and Arizcuren-Balsco (2019), it is essential to work on facial expressions in the corporal environment, since they faithfully reflect the state of mind and guarantee the transmission of messages.

It seems, therefore, that physical distancing and covering the face will greatly limit the expressive character of the subject. What puts most pressure on future teachers is the uncertainty of how long this situation will last. In view of this, it is a priority that the training of PE teachers be focused on these new needs, considering them as a new opportunity that questions the dominant research discourse and the power relations that manage knowledge (Casey and Larsson, 2018).

Regarding the second category relating to the professional identity of future teachers, mention must be made of the fact that future PE teachers state that there is a diversity of content that they see as impossible to apply with COVID-19, as well as some pedagogical models such as cooperative learning. In fact, related to the reconstruction of professional identity, future teachers recognise the need to adapt to this new situation, emphasising that the vision they have of PE should not change. Studies such as that of Viciano and Mayorga-Vega (2017) indicate the fundamental importance of the initial training of teachers, since a large part of the learning acquired at university will be applied throughout their professional careers. PE has suffered many attacks in recent decades, and it is essential that teachers remain united in order to demand the need for the subject for the comprehensive development of students. In this respect, physical literacy is a fundamental concept for the professional advancement of teachers (Durden-Myers and Keegan, 2019). It seems necessary, today more than ever, to redefine the purposes of PE, demonstrating with evidence the immense possibilities of the subject. In this way, it will be possible to connect with the administrative, political, and curricular interests of the state with a subject that still suffers from curricular marginalisation in the school curriculum (Dauenhauer et al., 2019).

Last, considering our third construct linked to the Chaos theory and concretely, with order and disorder (Adams and Russ, 1992; Jones, 1994) raised in the theoretical framework of the study, the results demonstrate how the situation of Covid-19 raises great uncertainties that require a rethinking and reflection in PE (Author 2). These events, which are impossible to predict, may represent an opportunity to reconfigure the subject as a discipline, but to do so, it is necessary to re-establish its goals and attend to its multidisciplinary scope with so much educational potential. In fact, the pedagogical capacity of each teacher and environment generates unstable situations (Renshaw et al., 2019). However, future PE teachers are having doubts and problems to reorganise PE in the age of Covid-19 and this produces effects linked to fears and insecurity (Varea, González-Calvo & García-Monge, 2020). In addition, the educational process is exposed to many external stimuli demonstrating the dynamic and changing character of education. In applied terms, the present study might help explain variability responses in physical education class. For all these reasons, this manuscript is based on the theory of chaos, showing how the fears, insecurities and uncertainties generated by the situation of Covid-19 connect with the professional identity of future PE teachers. Some of these insecurities have centred fundamentally on the question of whether they will be able to apply what they have learned at university in their professional practice, or how they will be able to respect the pedagogical treatment of the body with the restrictions due to Covid-19. However, despite the inconvenience and uncertainty presented, the substantial reflection of the future PE teachers in the reflective students' diaries and discussion groups could help to identify and control the potential disruptions. For this reason, chaotic behaviours have to be identified previously and taken advantage of, to improve the teaching process. Along these lines, as established by Backman and Barker (2020), it is necessary to rethink knowledge of pedagogical content in order to establish a body culture that acts on the diversity of PE and allows uncertainty to be managed in its teaching.

Conclusions

The article has analysed the fears, insecurities and influence of the coronavirus in the reconstruction of the professional identity of future PE teachers. The participants showed great uncertainty about how to face their professional future, with physical distance and the inability to share spaces and equipment being the main limitations they perceive to teaching the subject. This makes them rethink the usefulness and replicability of what they have learned throughout their university career. Given this new paradigm facing education, and PE in particular, it is necessary to rethink the purpose of the subject, making the initial training of teachers especially relevant. Therefore, it is essential that both educational institutions and physical educators reflect on three fundamental aspects; a) designing flexible educational curricula adapted to the situation of Covid-19 b) carrying out educational planning in PE focused on student learning; c) promoting the training of PE teachers with a diversity of resources for application in the classroom.

The present research is a significant contribution to the existing literature on the subject, since there is still no research linking the situation of Covid-19 to the uncertainties generated in future PE teachers. This makes it possible to generate deep reflections on how initial teacher training should be approached, and above all to create awareness of the redefinition of the purposes of the subject. However, the manuscript presents some limitations. First, it only addresses the perception of future teachers who have not yet exercised their professional duties. Secondly, there has been no practical intervention in PE classes. As possible future lines of research, it would be of interest to analyse what the real limitations are for PE teachers in the classroom and how they adapt to this teaching with physical distance. We consider that this article could be of interest to all PE teachers at any stage of education, since it will enable them to reflect on what the real aims of the subject should be. It could

also be useful to all those responsible for developing curricula and educational programmes in schools, highlighting PE as a fundamental and necessary subject during a pandemic. It is essential to continue research on the professional development of PE teachers in such an exceptional situation, in order to seek solutions to ensure the comprehensive development of students.

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