Whole Systems Thinking and Context of the University Teacher on Curricular Sustainability in Primary Education Teaching Degrees at the University of Zaragoza

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Abstract: The traditional, mechanistic university context is far from achieving commitment and accountability for Education for Sustainable Development (ESD). The whole structure must be redefined in terms of teaching, research, management, and the connection with the whole community. The main objective is based on identifying the cognitive perception that university teachers have in relation to curricular sustainability, and how this is linked to the context in which they develop their teaching practice. The sample is made up of 15 teachers, selected purposively and non-randomly: 3 women and 12 men, with a mean age of 45.57 ± 9.72. The information was obtained from focus groups, using a semi-structured questionnaire. The QRS NVIVO 12 software program was used for content analysis. The results show a preponderant lack of knowledge, skills, and abilities in sustainability, given a lack of attitude towards change. The results show that the transformation lies in teacher training, based on workshops, courses, or experiential activities. Finally, assessing their own context, the participants highlighted the lack of a joint institutional strategy on sustainability.

Keywords: education for sustainable development (ESD); university teachers; focus groups; curricular sustainability; higher education

1. Introduction

1.1. Sustainability Awareness of University Teachers

Paulo Freire said, "who dares to teach must never cease to learn". Today's teaching profession has a great responsibility to transmit knowledge, skills, and values, that generate an awareness of sustainability that is compatible with the environmental and social changes proposed by reality [1]. ESD aims to create an education system of teaching and learning that transmits to students all the knowledge needed to achieve a sustainable future [2]. Universities have assumed the responsibility of promoting and endorsing the fulfilment of this goal [3,4], so university teachers have the obligation to be up-to-date in regard to the knowledge, attitude, value, and skills, needed to transmit this goal to their students [5]. UNESCO also stresses that priority should be given to the development of ESD in the initial training of teachers, as priority social agents in society [6].

When a university endorses the values of sustainability, it means that sustainability is embedded in its DNA, in the principles that govern it [7]. The whole institution must change, it must redefine a strategy of change for teaching, research, management, and connection with its own community, towards greater commitment and social responsibility [8]. Teachers must adapt to change by continuing to update their knowledge. In 2012, the Conference of Spanish Universities Rectors (CRUE) [9], based on an evaluation of university sustainability, highlighted that the main activities that teachers draw on are related to courses, conferences, external activities, news, etc.; in other words, one-off activities without continuity over time. However, they do not engage so much with participation

committees, volunteer programmes, innovation projects, etc., or actions that require continuity for their development. Furthermore, in some universities, sustainability integration projects have been created, although the preponderance resides, as we have stated, in the implementation of specific training courses for teaching staff [8].

Although teachers continually refer to the need to acquire knowledge, the literature points to some characteristics that should be inherent to the teacher, in addition to the knowledge itself [10]. Teachers must be able to tackle challenges and real problems, and they must be people with commitment and motivation for what they teach, with the ability to raise awareness among the people around them [11]. To this end, it is not only necessary for them to have knowledge about ESD, but also for them to have a critical attitude, and an affinity and enthusiasm for what they are teaching and transmitting [12].

All of this leads us to the conclusion that teachers not only need knowledge, but that their perceptions, behaviours, and attitudes should create an awareness that is part of the formation of the person, inherent in the very being that transcends mere knowledge [13]. A person's environmental awareness is a term that depends on four main dimensions: (1) cognitive, related to environmental knowledge; (2) affective: beliefs and feelings about the environment; (3) conative: adopting pro-environmental behaviours; and (4) active: responsible environmental practices and behaviours [13]. Kieu et al. [14] suggest the need for a change of attitude; learning does not only lie in the acquisition of knowledge, but it is essential to develop transformative models that are geared towards reality, and propose resolutions of the problems presented [15].

1.2. Does Teacher Training Create Awareness or Knowledge?

The development of sustainability awareness among teachers is a priority for ESD education practices in the university context. The lack of knowledge, perceptions, and values among teachers, leads them to resort to a type of training that will boost their confidence in educating their students, even if based on isolated and insignificant knowledge [16,17].

Currently, university teachers are trained through programmes, courses, or strategies that are insufficient and inadequate for ESD development [18]. However, numerous authors [19,20] stress that ESD knowledge must be transmitted through ongoing training that helps teachers to develop optimal methodologies and strategies, through which they can confront their students with the reality and context of learning.

Timm & Barth [12] consider the need for an institutional approach which sets learning objectives, and the relationship between those objectives and the content and methodologies to be used. In addition, authors such as Chinedu & Wan-Mohamed [18], or Hofman-Bergholm [20], consider that training must provide sustainability competencies as a basis for the transformational learning that must be acquired in ESD. Teachers need to have an understanding of ESD, and must be flexible and able to adapt to the reality in which they learn. They must also be able to transmit meaningful learning to students, as opposed to learning that is isolated from the context [16,19].

In short, for ESD training to work, it must have some of the following characteristics: it must be flexible and geared towards the social reality in which it is framed [21], and it must empower teachers and provoke critical thinking in sustainability that will lead to the development of knowledge, skills, and values, in favour of sustainability [22,23].

1.3. The University as a Setting for System-Wide Change

The change towards an education system that integrates ESD not only involves the acquisition of practical knowledge that integrates values and attitudes [24], but it is also essential for it to be related to what reality demands, and for it to be contextualised in the teaching-learning process [25]. Therefore, if knowledge must be current, innovative, and contextualised, then the university, as the optimal setting, must act as a leader in the transmission and development of this new ESD-based education system [26–28].

Teachers can acquire knowledge and train themselves, but if change does not occur in a system-wide manner, through the commitment of all agents involved in higher educa-

tion [10], it will be very difficult for sustainability to be integrated. According to Ferreira et al. [29], change requires a reorientation of the entire education system; it does not suffice to incorporate ESD into the curriculum, it requires a change in the essence of all initial education. This model demonstrates that change towards ESD can only be achieved if there is an alignment of efforts at all levels and in all contexts.

With this in mind, the university should be seen as a context that is open to change, away from traditional and mechanistic approaches [30]. However, this educational reorientation is not progressing as successfully and as quickly as expected [6]. Despite the fact that numerous authors [24,31,32] claim that the current structures must be restructured, and must advance their research, and innovate, the university does not, ultimately, progress with them.

From what has been analysed so far, a general research objective is established based on determining the cognitive perception linked to the curricular sustainability of university teachers, taking into account the context in which they develop their teaching practice. In addition, three specific objectives are established which relate to: (1) determining the knowledge, skills, and abilities of teachers for the development of ESD; (2) discussing the need to develop ESD training; and (3) determining barriers and facilities shown by the university in relation to ESD.

Based on the results of the study, the aim is to lay the foundation for the design and implementation of a programme that will seek to enrich the curriculum of the Physical Education degree, ensuring that the subjects provide students (future teachers) with the necessary competencies to become agents of change who will take the lead in sustainability when teaching in schools.

2. Materials and Methods

The present study has utilized an interpretative or phenomenological approach, as it has applied content analysis to the testimonies compiled in focus groups. It should be noted that this research is part of the diagnostic evaluation of a doctoral thesis that aims to introduce curricular sustainability into the training of physical education teachers through an intervention programme. This research has been approved by the Research Ethics Committee of the Community of Aragon, Spain: CEICA (C.P.–C.I. PI21/076).

2.1. Participants

The study involved 15 university professors, selected from a purposive, non-random sample of 3 women and 12 men, who had a collective mean age of 45.57 $\pm$ 9.72. The sample consisted of university teaching staff of the Teacher Training Degree in Primary Education, with specialisation in Physical Education, at the University of Zaragoza, in the 2021/2022 academic year, Spain. The university teachers represented the three campuses of Aragon: five of them from the Faculty of Human Sciences and Education in Huesca; another five from the Faculty of Social and Human Sciences in Teruel; and the remaining five from the Faculty of Education in Zaragoza. The participants' work experiences varied between full-time teaching staff (n = 6), and part-time teaching staff (n = 9). In addition, five of them held managerial posts (deanship, vice-deanship, etc.).

The participants' contributions were registered with their consent, so that they could be recorded and analysed later. From the beginning of the study, the participants were made aware of the objective of the research.

2.2. Instrument

All the information was obtained from three focus groups, organised according to the campus to which they belonged. For this purpose, a semi-structured questionnaire was used, consisting of six questions organised around four focuses of interest: (1) We contextualised the need to work on ESD: What is your opinion on approaching/addressing sustainability education Sustainable Development Goals (SDGs) in teacher training? And from the perspective of the didactics of PE as an element/driver?; (2) University teacher

profile on ESD: What knowledge, skills, or abilities do you consider you possess, to work on Education for Sustainable Development at university?; (3) Need for ESD training: Do you consider that teacher training for university teachers in the development of Education for Sustainable Development is necessary at university? Why? What kind of teacher training do you consider necessary for sustainable development at the university?; and (4) Teacher perception of the university: Do you know of any university initiative (in general, in any area) that helps to work on ESD, teaching practices, or strategies? What difficulties exist in the current university context of teacher education (PE) for the development of ESD? And facilitating elements? What approaches or models are you currently developing through your teaching practice?

All the information collected from the groups was coded into a system of categories (see Table 1), created through an inductive and deductive process. In addition, the QRS NVIVO 12 software program was used for content analysis.

Table 1. Category system.

Dimension	Categories	Indicators
1. Education in sustainability	1.1. Whole-systems-thinking of the subject	1.1.1. Knowledge, skills and abilities
		1.1.2. Teacher training
	1.2. Sustainable university	1.2.1. Context

Source: Compiled by the authors.

The system of categories aims to describe those arguments that have to do with the subject's thinking on sustainability, taking into account the university context in which it is developed. Dimension one is education in sustainability, to which end a series of categories and indicators were established to giving voice to the main requirement.

The whole-systems-thinking of the subject—category 1.1.—refers to the set of ideas linked to the cognitive profile that makes up the university teacher on ESD. Indicator 1.1.1.—knowledge, skills and abilities– refers to the teacher's set of skills for the development of ESD. Indicator 1.1.2.—teacher training–refers to the need to train teachers for ESD development.

The sustainable university—category 1.2.—refers to arguments related to the teaching staff's perception of the current university. Context refers to arguments that relate to how easy or difficult it is for the university to develop ESD.

2.3. Procedure

Prior to the start of the focus groups, an expert consultation was carried out to verify whether the questions covered by the instrument, represented the aim of the study. On the basis of this consultation, and the evaluations obtained from three external researchers with knowledge of the subject, the appropriate changes were made to the relevant questions, as well as to the analysis system itself.

Subsequently, during the months of May and June of the 2020/2021 academic year, the development of the 3 focus groups began, with an approximate duration of 60 min. The COVID-19 pandemic limited the possibility of the groups being held in person, so it was decided to conduct them in an online format. Subsequently, all the interventions were transcribed into documents, and their content was analysed in keeping with the phases proposed by Bardin [33]:

- The pre-analysis phase involved a superficial reading of the transcripts. A pilot test was applied using the system of categories obtained from the expert consultation, which allowed greater specificity of some indicators around the object of study. The material obtained was divided into paragraphs, and 30% of these were randomly selected for the subsequent concordance test. The Fleiss Kappa test was then applied to the 3 main researchers, obtaining an agreement of k = 0.85.

- During the exploitation phase, all the fragments referring to the three focus groups were analysed by consensus among the three researchers. The procedure to be followed had to do with a first identification of the fragment in relation to the main dimension. Once this had been agreed, the category describing the content of the fragment was identified. The last level of specificity was given by the indicator that the argument resembled, the second category had only one indicator, so this step was omitted. In the event that an argument contained more than one idea corresponding to several indicators, the argument was broken down into the respective paragraphs.
- Finally, the results were interpreted using the content analysis program QRS NVIVO 12. The software allows for downloading a report for each of the indicators, in which each fragment is compiled by indicator, indicating its origin, i.e., one of the three focus groups we had carried out. In this way, the interpretation of the results was based on this compilation, identifying content units that organised the ideas of the informants.

3. Results

Figure 1 shows the number of references extracted according to the dimension, categories and indicators that have been analysed.
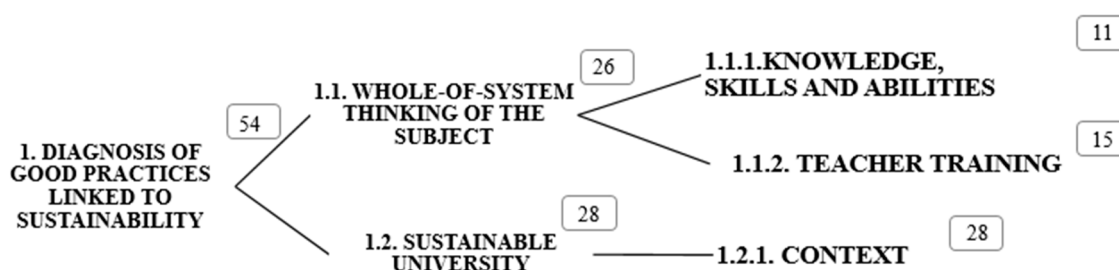
Figure 1. Number of references according to the category system. Source: Compiled by the authors.

3.1. Belief in the Possibility of Developing ESD: Training Students Based on Real Learning and Action—Category 1.1. Whole Systems Thinking

Category 1.1. Whole systems thinking of the subject (26 references), slightly below the second category, refers to the set of ideas linked to the ESD university teacher profile (see Figure 1). In addition, the references are divided into two indicators that refer to characteristics that this teacher should have, see Figure 2. Indicator 1.1.2., teacher training, is the indicator with the highest number of references (15), although with very few differences from indicator 1.1.1., knowledge, skills and abilities, which had 11 references.

Figure 2. Whole systems thinking. Source: Compiled by the authors.

In indicator 1.1.1.—knowledge, skills and abilities— references were organised around those who felt that ESD development was not so much about knowledge, skills or abilities, but about a way of understanding life:

> "Well, I think I have very little knowledge, skills or abilities. At a general level or at a formative level, beyond your way of seeing life (...) I think that many

things are inherent to the person, and that no matter how much we set ourselves objectives, there are objectives that are so well-embedded in the person as to be able to transmit them afterwards (. . .)." (Alexa)

In contrast to the above arguments, participants generally focused on highlighting knowledge, skills, or aptitudes they possessed, as well as how to develop them. They considered attitudinal work to be a priority, with the aim of raising awareness:

"(. . .) I think it is very important, on a personal level, for us all to believe in the SDGs (...) I really do believe in many of them. So, if I believe in them, I think it is much easier for me to pass them on to my students than if I don't believe them." (Thomas)

On the other hand, they consider that, in order to develop knowledge, skills or abilities, it is important to work from transformative learning approaches that foster interdisciplinarity and collective commitment, participating collaboratively with multiple actors and agents. In addition, they consider it relevant to encourage or promote creativity in students, as a transformative approach that helps them to attain knowledge:

"With the global vision that the SDGs pursue, it is impossible to limit it to an area like ours; we need to have alliances with other areas to develop common projects (...). So, I think it is an essential condition for collaboration with other people to develop more global projects, the more of us who think about the issue of sustainability and have a similar idea of the world, the easier it will be to transfer it to the students and this can take hold." (Sam)

With regard to indicator 1.1.2.—teacher training— the references were organised around those who unequivocally supported the need for ESD training for university teachers: "I think that specific training is necessary, but I don't know what training is needed. I think it would be important to receive training to understand them, to be able to transmit them better (...)" (Thomas (note that the names used are fictitious, always respecting the participants' gender)). In addition, among the types of training they demand, it is worth highlighting those who call for the creation of working groups around the different SDGs:

"(. . .) a first step from the university is to locate those subjects that have the same SDGs, see if some of them have already incorporated them in other years and generate some kind of group or groups where they can share experiences and gradually grow." (Charlie)

Others call for innovative, experiential, and action-based training days, that can help participants integrate ESD.:

"I think that one of the best training forums could be the innovation conferences that the Institute of Education Sciences always organises (...). But I certainly agree that a traditional course would not have much effect." (William)

The largest number of references are found in those calling for action-based training with a real impact on the educational context:

"I think that nowadays it is more important to do and share, and work together with colleagues on small projects... in fact, it is how you learn and how you end up training, and how you learn to participate in this type of project (...). That is why it is better to work on small projects that help you to learn by doing." (James)

Finally, there were also those who had some doubts about the need for training (3):

"(. . .) I think that all this more transversal or more social, more environmental issue is very inherent to your way of living or your way of seeing life. So, no matter how much training they give you on something that you don't experience or don't live with, I think it's complicated (. . .)." (Alexa)

3.2. Educational Insecurity to Implement ESD due to the Lack of a Joint University-Wide Institutional Strategy—Category 1.2. Sustainable University

Category 1.2.—sustainable university—(see Figure 3) is the category with the highest number of references (28), which are organised around a single indicator—1.2.1. Context.
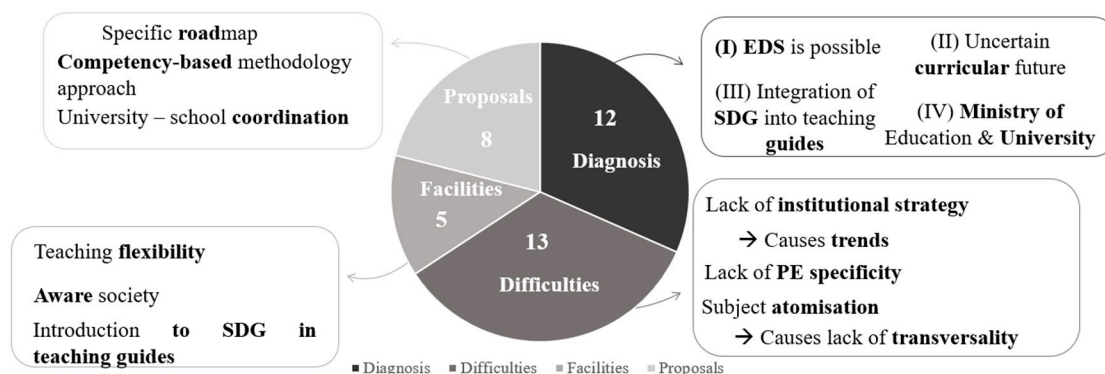
Figure 3. Sustainable university. Source: Compiled by the authors.

Indicator 1.2.1.—Context–refers to the difficulties or facilities offered by the university context, for teachers, when developing ESD. The information obtained has been organised into four parts (see Figure 3): the first part related to the diagnosis of the situation; the second part related to the facilities of this context; the third part related to the difficulties; and the fourth part related to the proposals that the teachers made according to the difficulties described.

Firstly, the teachers provided a diagnosis of the context in which they worked when implementing ESD. They highlighted the need to follow the same line as the Spanish Ministry of Education, which is currently firmly committed to working on and promoting the SDGs: "(...) So I think that if the Department of Education is strongly committed to developing them in the centres through different calls for proposals, I believe that the university should not look the other way" (Jack). In the same vein, they address the process of change that the curriculum is currently undergoing, which is a moment of uncertainty for the participants:

> "The education system is currently in the process of revising the curriculum at national level, a process that is well advanced and which has deadlines for implementation depending on the LOMCE (Organic Law for the improvement of the quality of education, Spanish Law)—the current education law in Spain—and we are now subject to the fact that we do not know what the curriculum scenario is going to be and how these issues are going to be dealt with in the education system, as I have said (. . .)." (Oliver)

Continuing along the lines of the context in which teachers develop, they highlighted a series of curricular and extracurricular initiatives that were already being put into practice and which they considered to be positive for the development of ESD: "(...) I remember the "climate caravan"; to a certain extent with some SDGs because it is closely related" (Thomas).

> "(. . .) The environment week and there they do a series of workshops, talks, they deal with all the SDGs related to aspects of the environment. They also talk about the aspect of guaranteeing responsible and sustainable consumption, the issue of renewables, the truth is that it's good. This year, for example, they brought in the people from *Ecoembes* (environmental non-profit organisation) and they talked about the use of recycled material, where this material goes, etc. In fact, we did give that talk as part of a Natural Environment class." (David)

In line with the diagnosis of the context carried out by the university professors, they also mentioned a series of facilities that they found in the context for developing ESD. Firstly, they highlighted the flexibility provided by the teaching guide, when it comes to introducing changes: "(...) It is also true that we have a certain flexibility to introduce changes in relation to certain content and to certain methodological developments. These methodological proposals should go hand in hand with the development of the SDGs, rather than in terms of changing the content" (James). Moreover, this flexibility is an advantage for the introduction of the SDGs in universities:

> "As for the legal framework, well, this year the actual university is going to include the SDGs in the teaching guides, so I understand that it is beginning to be facilitated and the teaching staff is beginning to be asked to do so explicitly. So, I think that it will help to develop these actions." (David)

The results of this study reiterate that the social awareness that exists and is currently being created, acts as a facilitator for change:

> "In terms of facilitators, I see that there is a greater awareness in society of the need to work on these issues, and I would dare to use a word that is in vogue, it is a trend that is currently in vogue. So that obviously makes it easier for people to get on the bandwagon. So, I think that this can be a facilitator because it encourages people, it is starting to be heard, it is already being heard in schools." (Harry)

Another aspect highlighted by teachers, with the highest number of references, is the difficulty they identify in the context when it comes to implementing ESD. Each of their responses centred on three focal points, ordered from least-to-most important, according to their criteria. Firstly, they consider that there is an atomisation of subjects, which leads to a lack of transversality:

> "For me, one of the difficulties or barriers that might exist in implementing these issues is that surely many of the objectives to be addressed will require transversality, they will require projects to be established, from different subjects, which can have an impact on these issues. But, on the other hand, the barrier is that we continue to have an excessive atomisation of training. Each subject acts independently, so it seems to me that these issues of sustainability, the SDGs, etc., in addition to the fact that things should be done in each subject, should demand greater transversality, greater coordination (. . .)." (Mike)

Secondly, they consider that there is a lack of specificity in physical education: "I think that, right now, Physical Education, as specific content, has very little time for specific training (...). And I think that that is the main difficulty, it is the lack of presence of the curriculum during this specific training" (Charlotte).

Thirdly, the most repeated argument in terms of difficulties, related to the lack of an institutional strategy to guide implementing and working on ESD:

> "One of the main difficulties would be the absence of a clear guide and guidelines set by the University of Zaragoza on how these issues should hypothetically be addressed within the different subjects, which would be a difficulty when it comes to proposing any type of initiative with respect to this subject." (Harry)

In the light of the difficulties mentioned above, three main proposals for improvement are outlined. Firstly, given the existence of an atomisation of subjects, a coordinated approach that promotes the creation of alliances and networks between the university and the education centres, is proposed:

> "So not only should we be in contact so that they can tell us what they are doing, but we should also work together and collaboratively, university teachers with teachers from the education system, because I believe that this is a way in which we have to be expectant. We should be able to make proposals that are put into

practice because we are working or should be working with practical projects, with real things. And in which we work with teaching staff from the education system." (Charlotte)

Regarding the difficulty with the lack of specificity of physical education, a change in the conception of the subjects is proposed, opting for a competency-based learning approach:

"We also have to change the concept of subjects (...) But we cannot transmit an ever-increasing package of knowledge to the student (...) And I believe that we have to turn around the subjects, and really work on competencies and not on content. We also need to work on competencies at university for our students. And not to worry about arriving at what we currently understand as a subject syllabus. And that is a whole systems problem, a problem of all of us, of the approach to the curriculum." (Oliver)

Finally, in the absence of an institutional strategy, it is proposed that a roadmap be created to set out clear guidelines that can help university teaching staff:

"So, I think that in order to make a good start and not put the cart before the horse, at university level, we would need our leaders, our university, to clearly define where it wants to go, what it wants to achieve (...). That is to say, a roadmap, but that roadmap should be based on the roadmap established by our own university. So, I insist that we want to get down to basics, and I believe that the foundations are lacking." (Mike)

4. Discussion

The research sought to determine university teachers' perceptions of the integration of ESD in their professional context. The first objective was to determine what knowledge, skills and abilities these teachers had with respect to ESD.

In relation to this first objective, the participants emphasised that knowledge was not the only factor in developing ESD, but that it also had to do with the person's own sensitivity towards sustainability, a change that is not only related to knowledge, but also depends on creating sustainability awareness, in accordance with the social and environmental reality in which we currently live [1]. Another of the results in relation to this objective, related to how to develop knowledge in sustainability; the participants highlighted the need to work based on attitudes, from the person's own awareness. Evans et al., [10] stress the idea that teachers should not only refer to the acquisition of knowledge, but that the development of ESD should be an inherent characteristic of the person. They must be trained on the ability to tackle the challenges and problems of reality, maintaining the commitment, motivation, and attitude, to raise awareness among the people they train [11,12]. Furthermore, they stressed that in order to achieve knowledge, it is necessary to work from transformative, interdisciplinary and collective approaches. A change of attitude in line with sustainability requires models that are geared towards transformation, innovation, commitment, and conflict resolution [14].

In relation to the second objective of this study, a debate was established about the need to develop ESD training. Based on this, and with the majority of arguments in favour, some participants determined how such training should be developed, referring to the fact that the best options had to do with innovation, experiential, and action-based workdays. They call for training that involves meeting with peers, working on small projects, and learning through real practice and with a transformative purpose. As highlighted in the literature [7,32], teachers are not interested in engaging in activities that require continuity for their training, but prefer one-off courses in which it is difficult to change their mindset or awareness of sustainability, and to transform people, curricula and systems. On the other hand, many of the participants highlight the need for training courses to be related to local context. Training geared towards these characteristics would be essential for the development of ESD, since, as García-González et al. [34] and Kalsoom & Qureshi [16] point

out, teachers must be flexible, adaptable to reality, and capable of transmitting learning linked to ESD.

With the last objective in mind, the barriers and difficulties of the actual university in relation to ESD were established. To begin with, and by analysing their current teaching context, they highlight the fact that the existing uncertainty often prevents them from making progress. In order to consider the university context as a perfect setting for developing ESD, it must be up-to-date and be a leader in the transmission of a new education system [25], which is why the uncertainty due to changes in education laws should lead to the creation of laws in line with the times in which we live, which in turn will put an end to uncertainty, and draw clear lines of action for ESD.

For teachers, the university context is a flexible environment for adopting methodological and conceptual changes that can contribute to the development of ESD and the work of the SDGs. Faculties of Education need to be the places for change, to be transformative, innovative, and transgressive, to be far removed from mechanistic and meaningless approaches [30].

Although they value the facilities of the context, they also consider that the existing difficulties greatly limit their professional development in ESD. The participants highlight a lack of transversality in the subjects, a lack of specificity in the area in which they are developed (physical education), and a lack of a joint institutional strategy on the part of the university, to guide teachers on the path towards ESD. Despite considering the university environment as a place open to change, such higher education has not yet managed to make the leap [10], to draw the lines of a complete reorientation that would allow for the restructuring of all the parts that comprise the university [29,32].

A complete, holistic, whole systems change, a change in the university DNA, does not only depend on the institutions andthe laws, it also depends on all the people, beliefs, and customs, that comprise the university. It implies a change in all directions, where all people are open and empowered to move towards an education system that adjusts to the planetary reality in which we live.

5. Conclusions

Generally speaking, and referring to the main objective of the study, it is worth noting that teachers reported a lack of knowledge, skills, or abilities required for change. They all agreed that this is due to a lack of sustainability awareness required for change. In addition, those who consider themselves to have the necessary knowledge, skills, or abilities, highlight that this is largely due to an attitudinal issue. In other words, their way of living and developing brings them closer to living in a sustainable way, so they consider that their teaching practice should move in this direction. When we talk about the need for training, many of them gear it towards attitude, considering that if we work at this level, we can achieve an awareness of sustainability that is adequate for integrating ESD into initial teacher training.

The study was developed as part of the diagnostic evaluation of a doctoral thesis that aims to introduce ESD into the initial training of physical education teachers. The results identified have made it possible to determine the facilitators and barriers that need to be worked on with university teachers. Based on this, it has been possible to set out the first steps to integrating ESD into initial teacher training, through an intervention programme called Siempre activODS project.

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