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Knowledge about the sustainable development goals of future early childhood education and primary school teachers

Conocimiento sobre los Objetivos de Desarrollo Sostenible del futuro profesorado de Educación infantil y Primaria

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Abstract
Universities are a context where actions are being taken to develop sustainable skills that will allow the achievement of the SDGs, with sustainability being incorporated into campus management and curriculum. Consequently, this study analyzes the level of SDG knowledge and perception of future early childhood education and primary school teachers. The aim is to give visibility to the impact of university curricula on their training. A quantitative methodology is chosen that uses a questionnaire which collects both sociodemographic information and other information specifically linked to the SDGs (knowledge level, training contexts and the need to incorporate the SDGs into the study plans of the degrees). The analysis of the results has been carried out using the Excel program. The most notable results are the lack of training and knowledge in terms of SDGs, as well as doubts regarding the incorporation of the SDGs into the undergraduate curriculum. For this reason, it is concluded that current education curricula are not meeting their objectives of promoting knowledge and practical application of the SDGs in future teachers. Consequently, it is necessary to revise the curricula so that they promote sustainability from theory and practice, promote training in teaching about the SDGs among university professors and promote spaces among future teachers where good SDG practices in compulsory education are shared.

Keywords
Primary education; early childhood education; sustainable development goals; sustainability; higher education.

Resumen
Las universidades son un contexto donde se está trabajando para el desarrollo de competencias sostenibles que permitan el logro de los ODS, incorporando la sostenibilidad en su gestión del campus y en el currículum. Consecuentemente, en este estudio se analiza el nivel de conocimiento y la percepción sobre los ODS que tienen las y los futuros maestros de educación infantil y primaria, con el objetivo de visibilizar el impacto de los planes de estudios universitarios sobre su formación. Se opta una metodología cuantitativa que utiliza un cuestionario que recopila tanto información sociodemográfica como otra vinculada específicamente a los ODS (grado de conocimiento, contextos de formación y la necesidad de incorporar los ODS en los planes de estudio de las titulaciones). El análisis de los resultados se ha realizado mediante el programa Excel. Los resultados más destacables obtenidos son la escasez de formación y el desconocimiento de los ODS, así como dudas relación a la incorporación de los ODS al currículum de grado. Por ello, se concluye que los actuales planes de estudio de educación no están cumpliendo sus objetivos de promover el conocimiento y la aplicación práctica de los ODS en los futuros docentes. Consecuentemente, se hace necesario revisar los planes de estudio para que promuevan la sostenibilidad desde la teoría y la práctica, promover formación en didáctica sobre los ODS entre el profesorado universitario y promover espacios entre futuros docentes donde se compartan buenas prácticas de ODS en la educación obligatoria.

Palabras clave
Educación Primaria; Educación Infantil; Objetivos de Desarrollo Sostenible; sostenibilidad; universidad.

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Introduction

In September 2015, the United Nations (UN) approved the 2030 Agenda, a plan of action to eradicate poverty, protect the planet, and ensure peace and prosperity for all people. To achieve this, the Agenda puts forth a set of Sustainable Development Goals (SDGs), specified as 17 global goals which are subdivided into more specific targets (a total of 169) that act on 5 critical areas: people, planet, prosperity, peace, and partnership. Although the 2030 Agenda is universal, each country sets its own goals to develop them at a national level and achieve sustainable development. However, to reach the SDGs it is necessary to act from a planetary perspective. As Morin (1999) would say, it is necessary to understand the human condition, to understand that we have an individual identity which is part of the human collective at the same time. For this reason and faced with the challenge of meeting the SDGs, it is necessary to understand that even though individual actions can contribute to the whole, cooperation between all agents involved (international organizations, companies, civil society, public administrations, etc.) becomes imperative if the 2030 Agenda is to be met.

Two of the key aspects of the 2030 Agenda are sustainability and sustainable development (UN, 2015). The first concept generates some controversy due to the lack of a unified definition (Johnston, 2007; Ríos and Botero, 2020), which leads to ambiguities when implementing it. In this article, we will use the proposal of Baena-Morales et al. (2021), who suggest basing the definition of sustainability on a three-pillar model proposed by Thompson (2017). This model is based on the integration and interrelation of three main concepts on which sustainability is constructed: economy, society, and the environment.

On the other hand, we understand sustainable development as the development that meets the needs of the present without compromising the ability of future generations to meet their own needs (UNESCO, 2014). One of the main aims of sustainable development is to find a balance between the environment and development, as well as between economy and ecology. Sustainability and sustainable development are the key concepts that guide us towards achieving the SDGs and in this regard, promoting Education for Sustainable Development (ESD) becomes fundamental. ESD is understood as "a vital process that goes beyond the limits of formal education and exists in the form of permanent learning, creating conditions for the development of environmental awareness and ecological culture." (Luengo, 2018, p. 404). According to UNESCO (2017), educational institutions and, specifically, teachers, are one of

the key agents of ESD. Therefore, it is crucial to focus on the training that these teachers receive at universities, given that they will then be the ones responsible for promoting the culture of sustainable development and sustainability of future generations.

Actions are already being taken at universities to develop sustainable skills that will allow the achievement of the SDGs, with sustainability being incorporated into campus management and curriculum (IAU, 2020; Segalàs and Sánchez, 2019; Serrate et al., 2019). In this study, we take a look at the SDG knowledge of first-year students enrolled in teaching degrees, specifically in Early Childhood Education and Primary School Education degrees. The importance of conducting studies with first-year students is based on the theory of authors such as Sharp and Green (1975), who assert that teaching models are more influenced by the models that students have experienced throughout their school trajectory rather than from what they learn during their teacher training, unless this training specifically restructures, reconstructs and reestablishes teaching and learning processes that encourage the student to think and conceptualize education in different ways. It is important to analyze the SDGs level of knowledge and perception that future teachers have, specifically in the context of early childhood and primary school education. This will give us information on whether ESD is really being promoted at a school level and will allow us to find out what the experience of future teachers in this area is. This information will allow us to promote significant learning and teaching processes that have a real application in their future work contexts throughout their training. With this in mind, the questions that guide this study are mainly three: What knowledge do future teachers have about the SDGs? Have they received training during their schooling or at university on the SDGs? Are they aware of the importance of learning and developing the SDGs?

Curricular sustainability in the university

The role of universities with regard to the 2030 Agenda is key to promote the sustainability competencies of the student body (García-González et al., 2020) and for this the Agenda specifies that it is necessary to ensure that:

all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace

and non-violence, global citizenship, and appreciation of cultural diversity and of culture's contribution to sustainable development (UNESCO, 2015, p.17).

Consequently, there are several universities that have already incorporated the work of the SDGs into their curriculum. Some examples are the Polytechnic University of Catalonia, the Complutense University of Madrid, the University of Valencia, the University of California, and the Zurich University of Applied Sciences, among many others.

The main missions of universities are to teach and to conduct scientific research or a combination of both (Hayden et al., 2018). However, in recent years a third mission has been given to universities: social impact through diffusion of knowledge. This mission highlights how the knowledge produced by universities contributes to the social context in which they are found and, in this way, becomes observable in some type of specific link with its environment or responds more to the notion of responsibility or social commitment than to an explicit function of the institution (Alonso et al., 2021, p.95).

Consequently, the university must promote research linked to social problems, conduct innovative projects that respond to the challenges of the 2030 Agenda, and teach in a way that helps develop curricular sustainability. This means that universities need to have an active commitment to incorporate the principles and values of sustainable development into teaching practices (De la Rosa et al., 2019; Murga-Menoyo, 2015).

Within the university environment, we face the challenge of training professionals who are capable of, on the one hand, proposing sustainable solutions to the problems they may encounter in their future work and, on the other hand, teaching the SDGs so that they can incorporate them into their ways of life and in their future work (Ramos, 2020). However, according to Guerenabarrena-Cortázar et al. (2021), this process comes with several obstacles: the resistance to change of some faculty members (Velázquez et al., 2005), the misunderstanding of the meaning and importance of ESD by faculty members (Cotton et al., 2007), the scarce teacher training on this subject (Velázquez et al., 2005), the overload caused by the curriculum itself (Cotton et al., 2007), the excessive teaching load (Aznar-Minguet et al., 2014), or the absence of institutional guidelines to develop sustainability in the center and classroom (Velázquez et al., 2005), among others.

To bring sustainability into the curriculum, it is necessary to promote ESD. To do this, UNESCO (2017) proposes 4 prisms from which to approach ESD. The first is an integrator

prism, which focuses attention on the factors, elements, and aspects of sustainability. The second one is contextual, which gives importance to local culture as a source of change towards sustainability. The third one is critical, which refers to the forming thoughts that question the dominant paradigm. And last is the transformative prism, which implies action, a change towards sustainable ways of life from a social, economic, and ecological perspective. Whichever way you look at it, addressing ESD implies focusing on guiding the student body so that they can acquire the necessary skills and abilities to build societies which are characterized by sustainability.

The training of future teachers in SDGs

According to Baena-Morales et al. (2021), the university context can contribute to the SDGs through various fields. They can provide knowledge, skills, and the motivation to understand and address these goals. They can also focus on researching the SDGs and propose solutions that have a positive impact on society and governance through university management, extension policies and social leadership. However, the reality is that studies that address the impact of sustainability competencies (Lozano et al., 2017) or how they work in the practice of different educational institutions (Ramos, 2020) are scarce. However, in recent years there has been an increase in publications on innovation projects for the development of the SDGs at different educational levels.

The study carried out by Pegalajar-Palomino and Burgos-García (2021) demonstrates that future teachers have a positive attitude towards sustainability and commitment to the environment. However, it also concludes that there is a deficit in the development of professional skills to apply the SDGs in their professional practice. Consequently, they stress the importance of incorporating content on sustainability in university curricula and how the institution itself should reinforce and defend the importance of the role of teachers in the construction of a sustainable society. Along with these aspects, spaces must be provided where good practices on sustainability can be shared and analyzed (Olmos et al., 2019). The purpose of these spaces is for future teachers to have good models on which to base their professional practices and should include practical training on SDGs in higher education curricula. The aim of these spaces should be to help students learn about their environment and how to respond to the challenges associated with it (Leich et al., 2018).

Methodology

Study design and sample

A descriptive study using quantitative methodology was conducted. The total sample consisted of 181 first-year students (year 2022-23) enrolled in teaching degrees of Early Childhood Education and Primary School Education at Florida Universitària (a center attached to the University of Valencia) and the Valencian International University (VIU). In terms of gender, a predominance of women over men can be observed (specifically, 88.5% compared to 11.5%). The sampling technique used was convenience sampling, given that students were contacted through the research team or collaborators. Students voluntarily agreed to participate anonymously, and the diversity of the group was respected, not excluding any student for reasons of gender, age, disability, or special educational needs.

Instrument and variables

The information was collected through an adaptation of the questionnaire by Seva-Larrosa et al. (2021). This instrument aims to analyze the SDG knowledge and perception of university students. The questionnaire consists of 4 blocks. The first includes closed questions about the sample's identifying data (center, degree, specialty, age, sex, nationality, previous studies, and type of center where the previous studies were carried out). The second block incorporates questions related to the level of SDG knowledge, offering answers on a Likert-type scale from 1 (totally disagree) to 6 (totally agree). The third block gathers information on the sources of information and/or contexts (formal, non-formal and informal) from which students have learned about the SDGs (for example, NGO workshops, seminars, talks, courses, University Cooperation actions, etc.). Responses were also expressed on a Likert-type scale from 1 (I have never been in this context or if I have, this source has never provided information about the SDGs) to 6 (Yes, this source provided a lot of information about the SDGs). And finally, the fourth block includes questions on the need to include the SDGs in the curriculum of teaching degrees. In this block, the answers are expressed on a Likert-type scale from 1 (totally disagree) to 6 (totally agree) and the option "I can't answer because I don't know anything about the SDGs" is added. The variables analyzed, all of them linked to the SDGs, are therefore: a) level of knowledge, b) sources of information and/or learning contexts, and c) incorporation of the SDGs into the study plans.

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Procedure

The first step of the procedure was contacting university professors who were active in the teaching degrees associated with this study. This was mainly done through personal contacts, followed by emailing corporate contact addresses. To extend our reach, the snowball technique was used, asking professors to share the research proposal with others who might be interested. After this first interaction, professors who had agreed to collaborate were provided with the questionnaire to be completed by the participating students and the corresponding informed consent form that included the description of the study and requested voluntary participation. Finally, the questionnaires were applied in online format (Google forms). All this was carried out throughout the first two weeks of the second quarter of the 2022-23 academic year.

Statistical analysis

The analysis was performed using the Microsoft Excel program. A quantitative analysis was carried out with the questionnaire answers. The sociodemographic variables were crossed, mainly those corresponding to the teaching degree, with the variables related to the level of SDG knowledge.

Ethical considerations

At all times the free will of the participants was respected, taking into account the informed consent offered. In relation to the data collected, these were treated impartially, honestly, and accurately. Conclusions were drawn from the information provided, without inferring additional data.

Results

The results extracted from the survey carried out are described below. First, the participant profile is addressed.

Sample profile

Figure 1 depicts the students according to the teaching degree they were enrolled in and the university center they attended. All of them were in their first year of the 2022-23 academic year. Specifically, 65 students were enrolled in the Early Childhood Education teaching degree and 57 were in the Primary School Education one. According to the university, 74 were enrolled

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at Florida Universitària —a center attached to the University of Valencia— and 48 were enrolled at the Valencian International University (VIU).

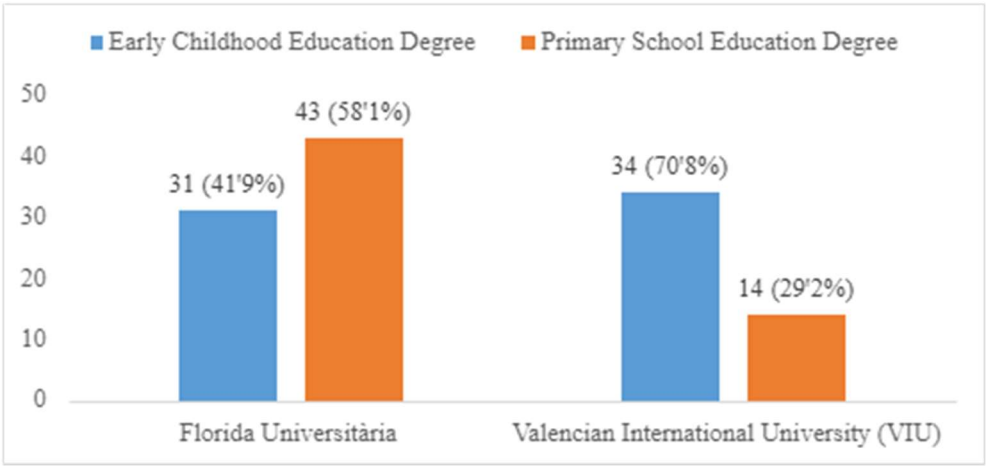
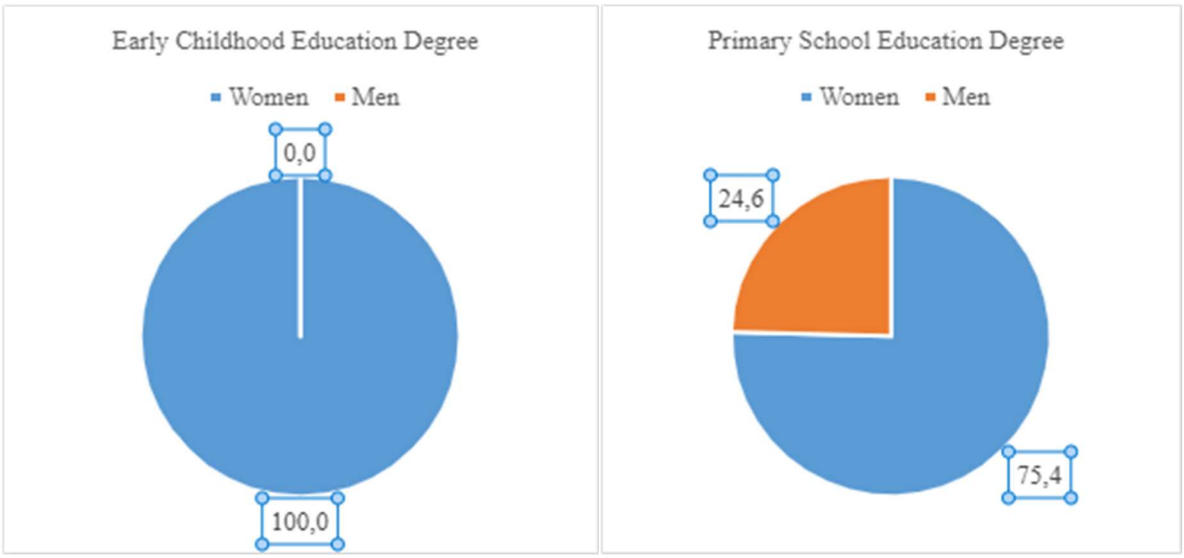


Figure 1. Participants according to degree and university. Source: own elaboration.

In terms of gender, Figure 2 shows the difference between student's gender according to the teaching degree. The sample of the Early Childhood Education teaching degree was entirely composed of women, which is consistent with the clear feminization of this professional sector.



However, 24.6% of male participants are appreciated compared to 75.4% of female participants, within the scope of the Primary School Education teaching degree.

Figure 2. Percentage of women and men participants according to teaching degree. Source: own elaboration.

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Regarding the distribution by age, there is a greater presence of people between the ages of 20 and 22 (50.8%) in the degree of Early Childhood Education (Figure 3), while the percentage relative to these ages is reduced to 17.5%, the majority being those between 18 and 19 years of age, in the case of those enrolled in the Primary School Education degree. This may be due to the previously chosen itineraries, that is, to their school trajectories prior to accessing university studies. In the case of Early Childhood, 24 participants state having completed other higher education degrees in the years prior to starting this degree (most of them, higher education), which delayed their access to it, but the same was not true of participants enrolled in Primary School Education degrees, in which most participants had enrolled after completing high school.

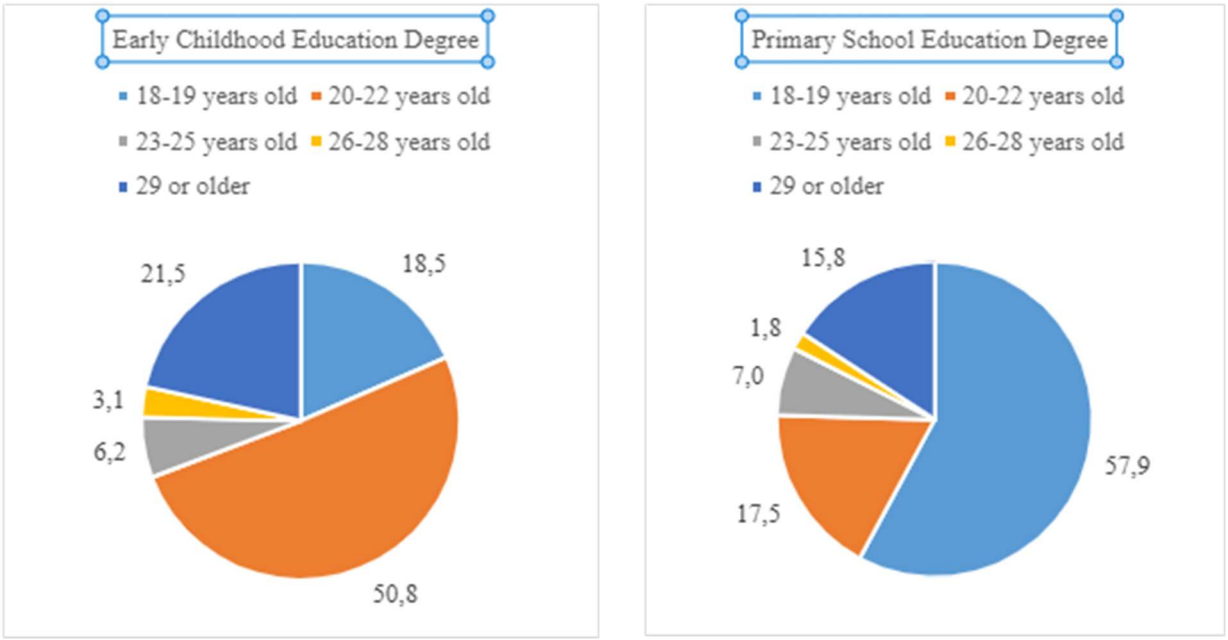

Figure 3. Participants according to age and teaching degree. Source: own elaboration.

Level of SDG knowledge of the participants

Following the description of the participant's profile, it is time to analyze the results according to their level of SDG knowledge.

Figures 4 and 5 show different sources —most of them educational contexts— from which participating first-year students could have potentially received information on the SDGs. The results of the students of the Early Childhood Education degree show that most students have never received information related to the SDGs (from 48% to 61% of the responses according to each context). Most individuals who received some type of information, however, affirm that

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said information has been little or very little, while only a small part reports having received a lot of information. For example, 10% of the participants enrolled in Early Childhood Education teaching degrees report receiving this type of information from the degree itself and 15% report receiving information from social media or emails.

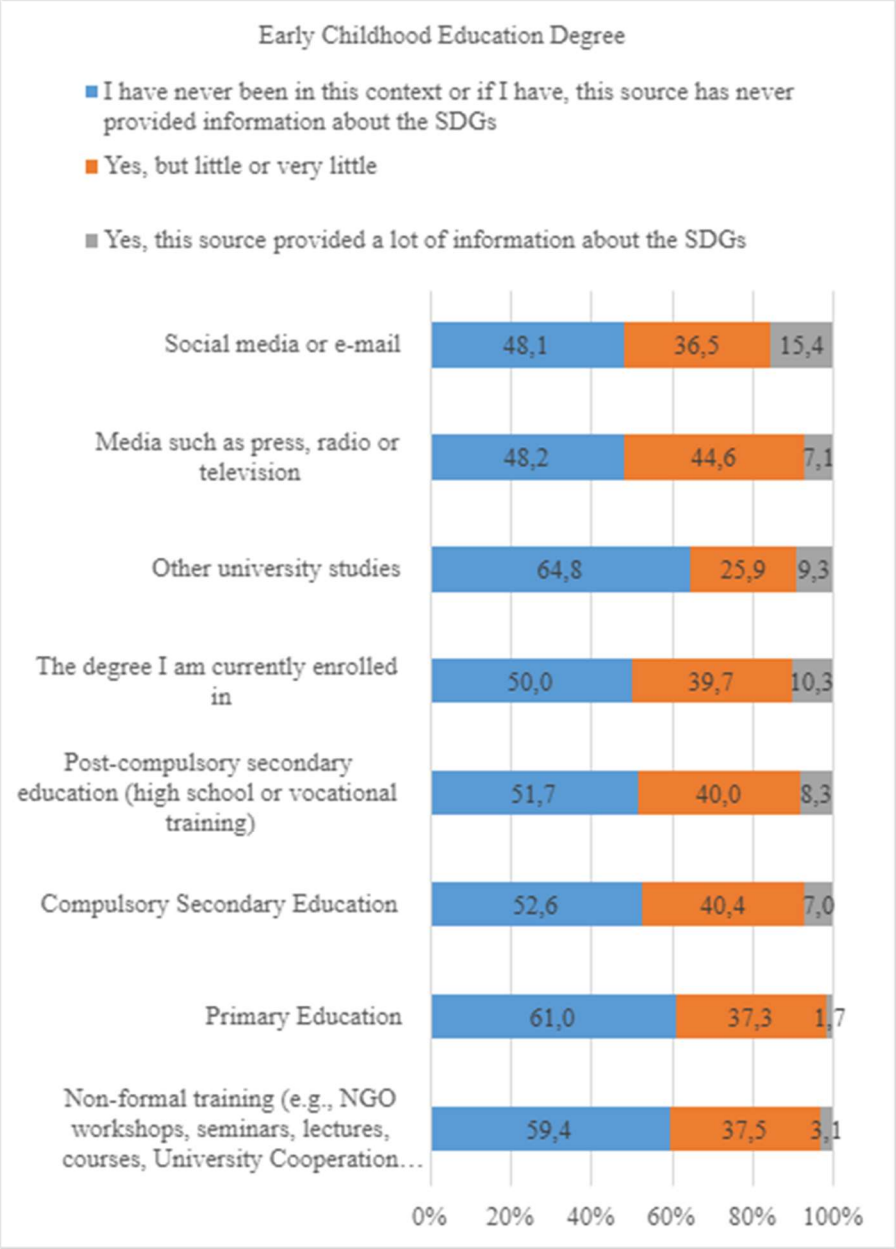

Figure 4. Sources of SDG information according to participants enrolled in Early Childhood Education. Relative data. Source: own elaboration.

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Figure 5 reports the results of participants enrolled in Primary School Education teaching degrees, with data being similar in many aspects to the ones from the Early Childhood Education degrees. Most of the students surveyed affirm never having received information on SDG, either because they have never received information from the source in question, or because they have never been in the context of said source, making it impossible to receive information. The most common source of SDG information seems to be, in this case, social media (or emails) at 11.3%, and secondary education (9.4%).

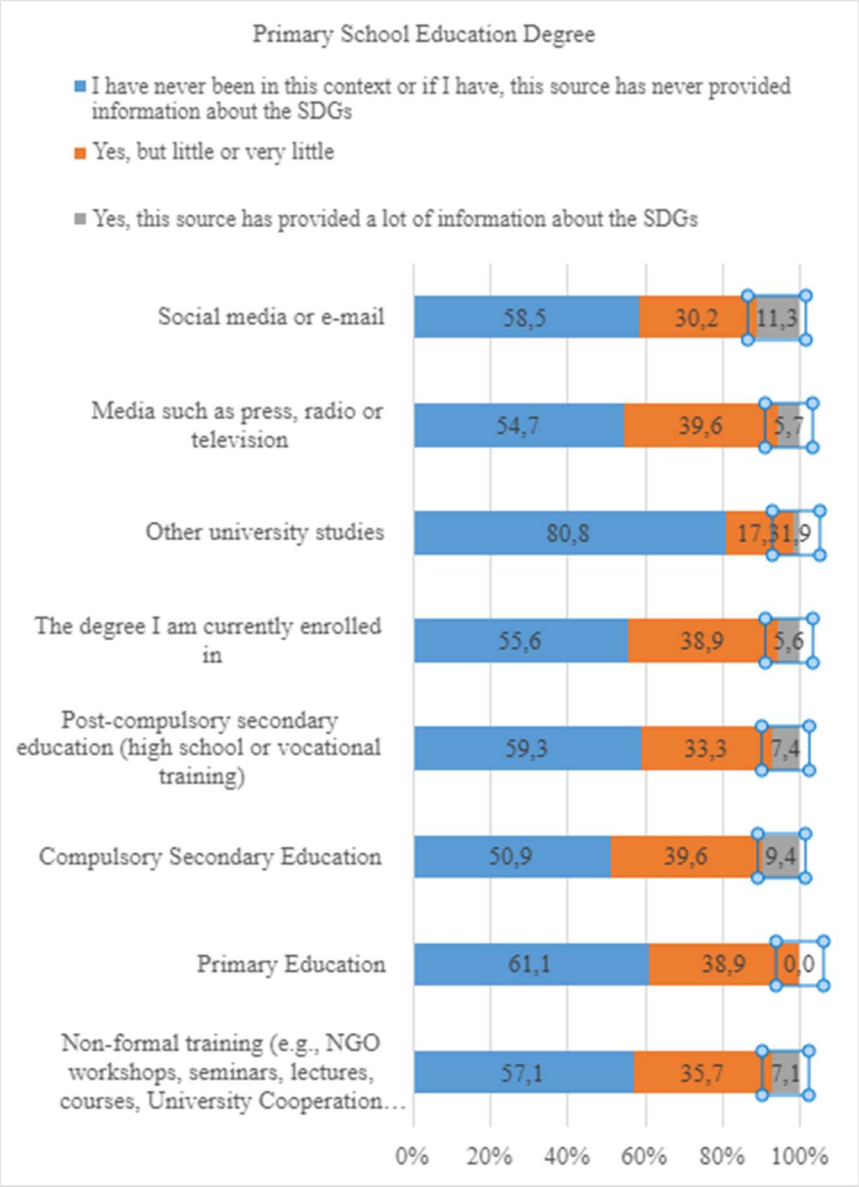

Figure 5. Sources of SDG information according to participants enrolled in Primary School Education. Relative data Source: own elaboration.

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A total of 33.8% of students enrolled in Early Childhood Education degrees claim to know nothing about the SDGs. This percentage is around 10% higher in the case of those enrolled in Primary School Education degrees, 43.9%. Along the same lines, Figure 6 shows how most of the people surveyed disagree (completely or almost completely) with the statement "I know what the SDGs are", both in Early Childhood Education teaching degrees (52.3%) and Primary School Education degrees (47.4%). At the other extreme, the percentage of students in total agreement (or close to agreeing) is notably lower, with 28% in the case of future primary school teachers and 15.4% of future early childhood education teachers, placing the percentage of students with a response that does not end up leaning in one direction or the other at 24.6% and 32.3%, respectively.

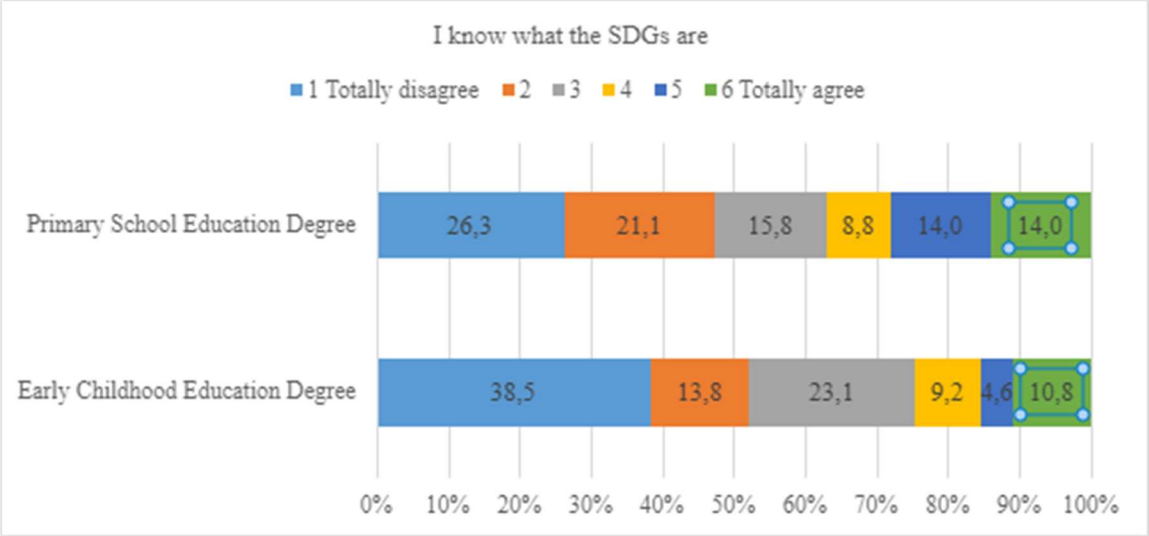

Figure 6. Level of SDG knowledge according to participants' teaching degree. Source: own elaboration.

In the case of Figures 7 and 8, they show —again by degrees— the level of agreement or disagreement regarding the statement "I know the time horizon for which the SDGs are designed" and "I know the countries that adhere to the SDGs", respectively. Both in one case and in the other, the data is very similar to that of Figure 6, with a large majority of students in disagreement compared to a minority of participants who agree with the statements, in both teaching degrees.

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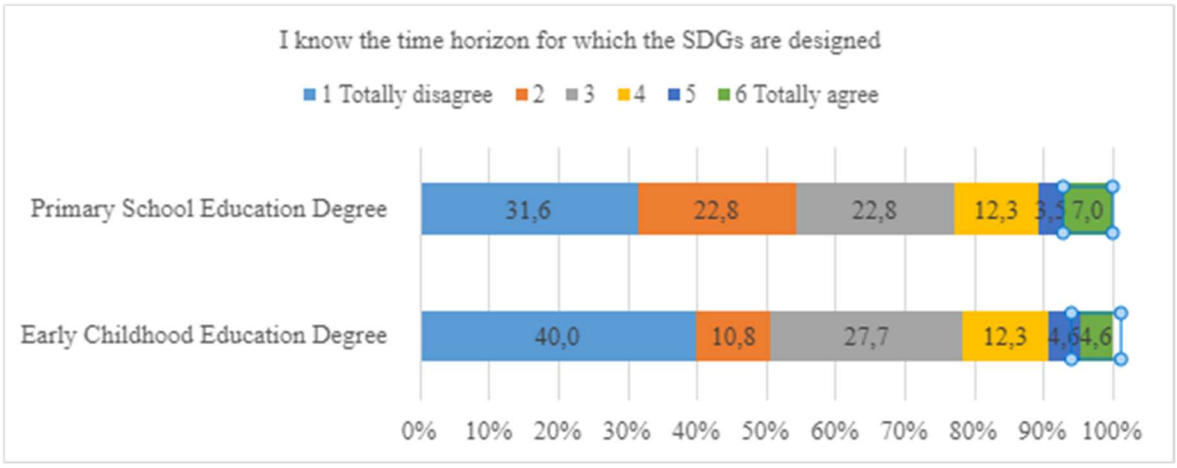

Figure 7. Knowledge level of the time horizon for which the SDGs are designed according to participants' teaching degree. Source: own elaboration.

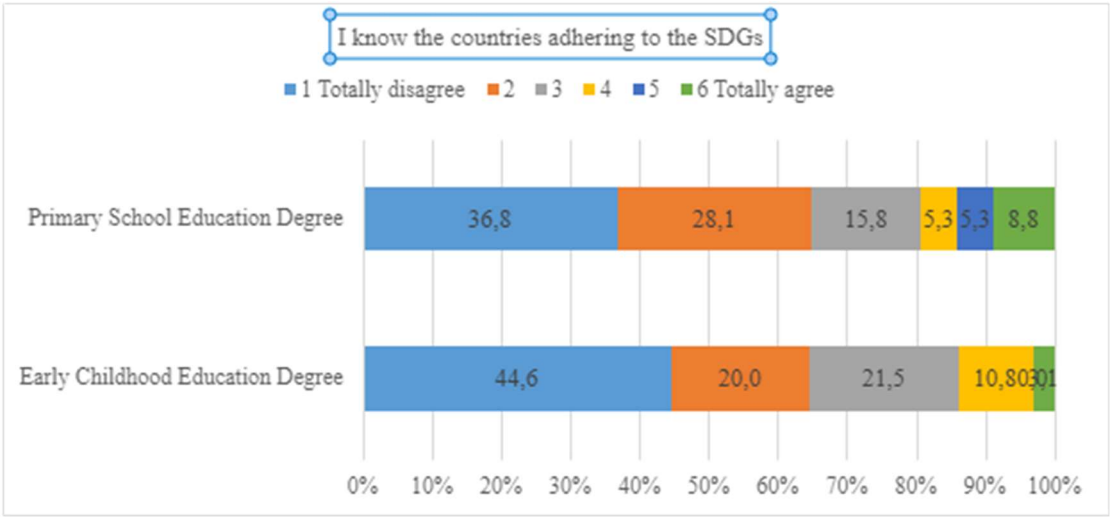

Figure 8. Knowledge level of the countries adhered to the SDGs according to the participants' teaching degree. Source: own elaboration.

These latest data presented contrast in part with those that follow, which reflect the importance given to the dissemination of the SDGs in higher education. Thus, for example, Figure 9 describes the level of agreement regarding the extent to which the SDGs should or should not be included in the curriculum of the teaching degree that the participants are currently enrolled in. According to the answers, most of the students are situated in a level of hesitant agreement that does not end up leaning in one direction or another —grades 3 and 4 according to the scale— 59.4% in the case of future primary school teachers and 53.5% of future early childhood

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education teachers. The percentage that clearly disagrees with the statement is minimal, while 34.4% future primary school teachers and 39.5% future early childhood education teachers, agree with this statement —grades 5 and 6 according to the scale.

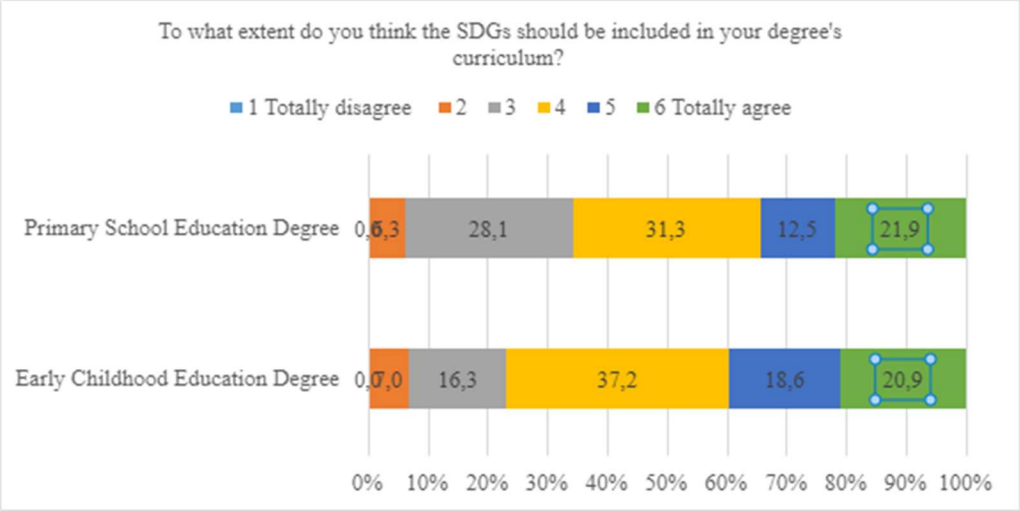

Figure 9. Level of agreement regarding the extent to which the SDGs should be included or not in the curriculum of the teaching degree the participant is currently enrolled in. Source: own elaboration.

Similarly, this trend is shown in Figures 10 and 11, in which the questions that are asked to show the level of agreement or disagreement are the following: “Do you think that universities have a responsibility in achieving the SDGs?” and "Do you think that educational centers have a responsibility in achieving the SDGs?".

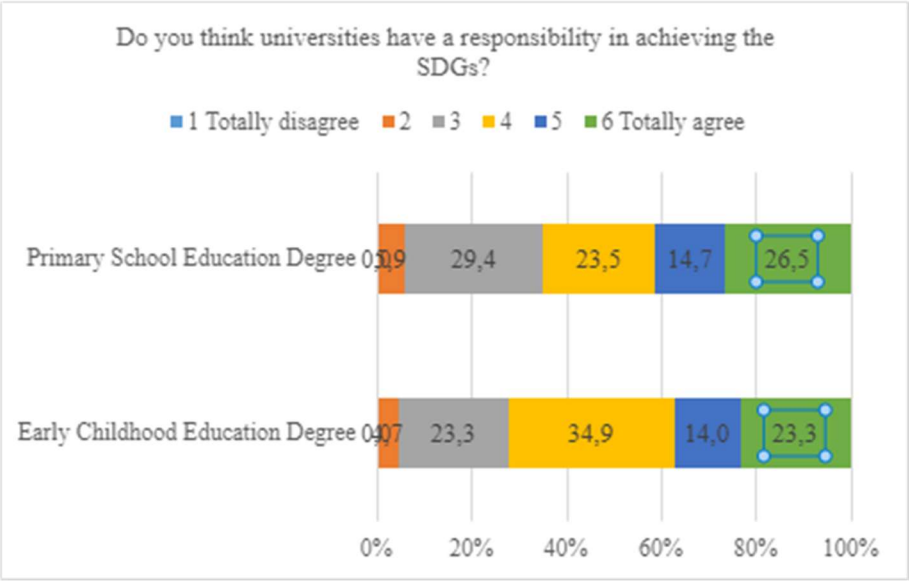

Figure 10. Level of agreement regarding whether or not universities have a responsibility in achieving the SDGs according to the participants’’ teaching degree. Source: own elaboration.

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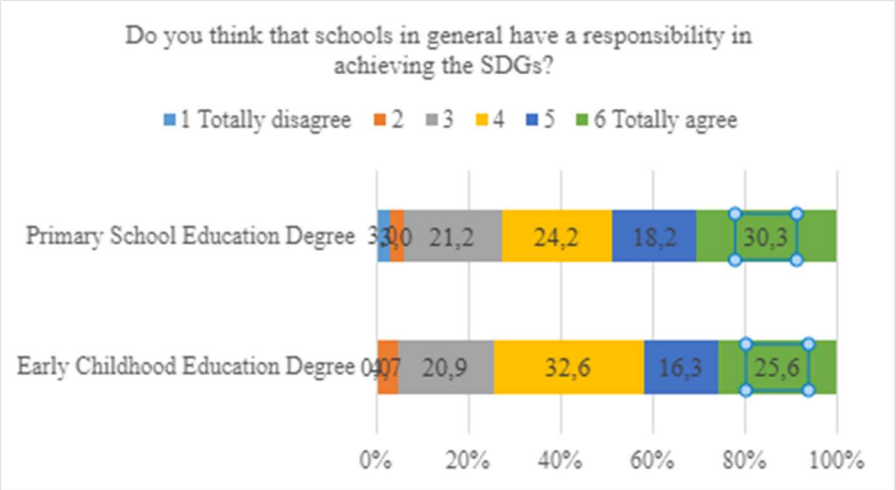

Figure 11. Level of agreement regarding whether or not educational centers in general have a responsibility for achieving the SDGs according to the participants'' teaching degree. Source: own elaboration.

As can be seen, both questions show a clear tendency towards yes, to a highly significant degree, although doubtful responses centered on grades 3 and 4 of the scale predominate, which is most likely due to the high percentage of students who say they know nothing about the SDGs. Therefore, the student body knows that it must be something important that should be dealt with in the field of the educational system, but by not knowing its scope, they doubt the magnitude of this importance.

Discussion

As proposed by UNESCO (2017), the promotion of Education for Sustainable Development (ESD) requires the involvement of educational institutions. This means that teachers become a key element, given that these professionals are responsible for promoting the culture of sustainability of future generations, which makes SDG training an unavoidable aspect in the training of future teachers. However, what is the current situation in the teaching degrees of Early Childhood and Primary School Education?

The results obtained —based on the perceptions of first-year students enrolled at the Florida Universitària and the Valencian International University (2022-23) — show that the training received in both degrees is characterized by the absence of content linked to the SDGs. However, those students who claim to be aware of them (25% Early Childhood and 20% Primary School) indicate the degree itself and social media or emails, in the case of Early Childhood Education, and secondary school and social media or emails, in the case of Primary School Education, as being the primary SDG sources of information. These data, together with

the lack of a teaching model that supports sustainability during initial teacher training (a need already pointed out decades ago by authors such as Sharp and Green, 1975), highlight an important obstacle in the challenge of training teachers capable of promoting sustainable education.

On the other hand, a high percentage of participants in both teaching degrees report total ignorance about the SDGs, the time horizon for the achievement of the SDGs, as well as the countries adhered to said commitment. Given these results, it is evident that universities must play a key role in promoting the sustainability competencies of the student body (García-González et al., 2020). This should be done without forgetting the requirement to incorporate principles and values of sustainable development into teaching practices (De la Rosa et al., 2019; Murga-Menoyo, 2015), as part of the so-called third mission that the university must fulfill, that is, the one linked to the social impact of knowledge (Alonso et al., 2021).

Therefore, universities should promote the training of teachers who are able to both provide sustainable solutions to daily life issues and to generate learning experiences that are transferable to other contexts (Ramos, 2020). The acquisition of this competence requires developing a university curriculum that promotes, encourages, and puts it into practice. In other words, principles and values of sustainable development must be included in university teaching practices (De la Rosa et al., 2019; Murga-Menoyo, 2015). However, it seems that uncertainty regarding the inclusion of the SDGs in the curriculum of Early Childhood and Primary School Education teaching degrees is the predominant trend among participants. Although the rejection is minimal, a position clearly in favor is represented by 34.4% in the case of future primary school teachers and 39.5% of future early childhood education teachers. This same trend is observed in the students' opinion regarding the role of the university with regard to the SDGs. It is important to insist on the fact that the sample consists of first-year students and, therefore, they have just started their training, which helps to understand that they have doubts regarding this subject.

Conclusions

The main conclusions highlight the need to continue influencing training in SDGs in future teachers, a need also linked to the current Organic Law 3/2020, of December 29, which modifies Organic Law 2. /2006, of May 3 (LOMLOE) to update curricular content incorporating sustainability and a large part of the SDGs into the official curriculum. However,

the fact that future teachers show a sensitivity towards sustainability and the environment (Pegalajar-Palomino and Burgos-García, 2021) being a facilitating element, is not enough. Universities, as institutions, must continue advancing in the generation of spaces for exchange, reflection, and analysis of good practices on sustainability (Olmos et al., 2019). This implies, as has been anticipated, incorporating practical training on the SDGs in the curricula of higher education, so that students can give contextualized answers to the challenges associated with it (Leich et al., 2018).

Consequently, future lines of research should investigate how universities are incorporating the work of the SDGs into their curriculum (Ramos, 2020) and what impact (Lozano et al., 2017) it is having on the personal and professional life of the student body. In addition, it is necessary to review the practices that are being carried out in compulsory education (preschool, primary and secondary) so that future teachers have reference teaching models based on sustainability.

References

Aznar-Minguet, P., Ull, M.A., Piñero, A. & Martínez, M.P. (2014). La sostenibilidad en la formación universitaria: Desafíos y oportunidades. Educación XXI, 1(1), 131-158. https://doi.org/10.5944/educxx1.17.1.10708

Cotton, D.R.E., Warren, M.F., Maiboroda, O. & Bailey, I. (2007). Sustainable development, higher education and pedagogy: A study of lecturers' beliefs and attitudes. *Environmental Education Research*, 13(5),579-597. https://doi.org10.1080/13504620701659061

De la Rosa, D., Giménez & De la Calle, C. (2019). Educación para el desarrollo sostenible. El papel de la universidad en la Agenda 2030. *Revista Prisma Social,*25,279-202. https://revistaprismasocial.es/article/view/2709

García-González, E., Jiménez-Fontana, R. & Azcárate, P. (2020). Education for Sustainability and the Sustainable Development Goals: Pre-Service Teachers' Perceptions and Knowledge, *Sustainability*,12,7741. https://doi.org/10.3390/su12187741

Guerenabarrena-Cortazar, L., Olaskoaga-Larrauri, J. & Cilleruelo-Carrasco, E. (2021). Obstáculos a la sostenibilización curricular en la universidad española. *Archivos Analíticos de Políticas Educativas,*29(94),1-20. https://doi.org/10.14507/epaa.29.5390

IAU (2020). *Higher Education and the 2030 Agenda: Moving into the "Decade of Action and Delivery for the SDGs".* International Association of Universities.

Leicht, A., Heiss, J. & Byun, W. J. (2018). *Issues and trends in Education for Sustainable Development.* UNESCO Publishing.

Ley Orgánica 3/2020, de 29 de diciembre, por la que se modifica la Ley Orgánica 2/2006, de 3 de mayo, de Educación. *Boletín Oficial del Estado*, núm. 340, de 30 de diciembre de 2020, pp. 122868-122953. https://www.boe.es/eli/es/lo/2020/12/29/3

Lozano, R., Merrill, M., Sammalisto, K., Ceulemans, K. & Lozano, F. (2017). Connecting Competences and Pedagogical Approaches for Sustainable Development in Higher Education: A Literature Review and Fremework Proposal. *Sustainability*, 9(10), 1-15. https://doi.org/10.3390/su9101889

Luengo, J. (2018). La educación para el desarrollo sostenible en el marco ideológico establecido por el paradigma neoliberal. In S.L. Matos, M.J.B.C. Ruiz y J.A.R. Hernández (eds), *La educación para el desarrollo sostenible: Sin tiempo para educar en el futuro, educando para la emergencia del presente* (pp.19-56). Universidad la Laguna.

Mc Cowan, T. (2019). *Higher Education for and Beyond the Sustainable Development Goals.* Palgrave Macmillan.

Mind, L. & Rieckmann, M. (2017). Developing competencies for sustainability-driven entrepreneurship in higher education: A literature review on teaching and learning methods. *Revista interuniversitaria*, 29, 129-159. https://doi.org/10.14201/teoredu291129159

Morin, E. (1999). *Los siete saberes necesarios para la educación del futuro*. UNESCO.

Murga-Menoyo, M. A. (2015). Competencias para el desarrollo sostenible: las capacidades, actitudes y valores meta de la educación en el marco de la Agenda global post-2015. *Foro de Educación*, 13(19), 55-83. http://dx.doi.org/10.14516/fde.2015.013.019.004

Negrín, M. Á. & Marrero, J. J. (2021). La nueva Ley de Educación (LOMLOE) ante los Objetivos de Desarrollo Sostenible de la Agenda 2030 y el reto de la COVID-19. *Avances en Supervisión Educativa*, (35), s-n. https://doi.org/10.23824/ase.v0i35.709

Olmos, M., Estrada, L. I., Ruiz, F., López, R. & Mohamed, L. (2019). Making future teachers more aware of issues related to sustainability: An assessment of best practices. *Sustainability*, 11(24), 7222. https://doi.org/10.3390/su11247222

Pegalajar-Palomino, M.C. & Burgos-García, A. (2021). What Does Education for Sustainable Development Offer in Initial Teacher Training? A Systematic Review, Journal of Teacher Education f*or Sustainability*, 23(1), 99-114. https://doi.org/10.2478/jtes-2021-0008

Ramos, D. I. (2020). Contribución de la educación superior a los Objetivos de Desarrollo Sostenible desde la docencia, *Revista Española de Educación Comparada*, 37, 89-110. https://doi.org/10.5944/reec.37.2021.27763

Scarff, S. C. & Ceulemans, K. (2017). Teaching Sustainability in Higher Education: Pedagogical Styles that Make a Difference, *Canadian Journal of Higher Education*, 47(2), 47-70. https://doi.org/10.47678/cjhe.v47i2.186284

Segalàs, J. & Sánchez, F. (2019). El proyecto EDINSOST. Formación en la Universidades españolas de profesionales como agentes de cambio para afrontar los retos de la

sociedad. *Revista de Educación Ambiental y Sostenibilidad*, 1(1), 1-16. https://doi.org/10.25267/Rev_educ_ambient_sostenibilidad.2019.v1.i1.1204

Serrate, S., Lucas, J., Cabellero, D. & Muñoz-Rodríguez, J. (2019). Responsabilidad universitaria en la implementación de los objetivos de desarrollo sostenible. *European Journal of Child Development, Education and Psychopathology*, 7(2), 183-196. https://doi.org/10.30552/ejpad.v7i2.119

Seva-Larrosa, P. (2021). Conocimiento y percepción de los alumnos en el ámbito universitario sobre los Objetivos de Desarrollo Sostenible (ODS). En R. Satorre (coord.). *Redes de Investigación e Innovación en Docencia Universitaria* (pp.161-170). Institut de Ciències de l'Educació (ICE) de la Universitat d'Alacant.

Sharp, R. & Green, A. (1975). *Educational and social control. A study in progressive Primary Education.* Routledge & Kegan Paul.

UNESCO (2017). *Educación para los Objetivos de Desarrollo Sostenible. Objetivos de aprendizaje.* https://unesdoc.unesco.org/ark:/48223/pf0000247444

UNESCO (2015). *United Nations Transforming Our World: The 2030 Agenda for Sustainable Development*. https://sustainabledevelopment.un.org/post2015/transformingourworld

Velazquez, L., Munguía, N. & Sanchez, M. (2005). Deterring sustainability in higher education institucions. An appraisal of the factors, which influencia sustainability in higher education institucions. *International Journal of Sustainability in Higher Education*, 6(4), 383-391. http://dx.doi.org/10.1108/14676370510623865

Valderrama-Hernández, R., Alcántara, L., Sánchez-Carracedo, F., Caballero, D., Gil-Doménech, D., Serrate, S., Vidal-Reméntol, S. & Miñano, R. (2019). ¿Forma en sostenibilidad el sistema universitario español? Visión del alumnado de cuatro universidades. *Educación XXI*, 22(1), 1-26. https://doi.org/10.5944/educxx1.23420