



Research paper

Heritage education in initial teacher training from a feminist and animal ethics perspective. A study on critical-empathic thinking for social change



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H I G H L I G H T S

- Studies on preservice teachers' conceptions are relevant due to their responsibility in planning educational processes.
- The values attributed to heritage can reflect a critical history aimed at improving society and restoring justice.
- Fragmented and particularistic approaches are frequent in anti-speciesist education and education with a feminist perspective.
- Heritage education can be a key piece for sustainable development goals (SDGs) by allowing a systemic vision of reality.
- Heritage Coeducation is a source that shows students the discrimination suffered by women and animals throughout history.

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A B S T R A C T

This article analyses the conceptions of teachers in initial training from different Spanish universities in relation to heritage education, feminist thought and animal ethics. For this purpose, a mixed research design has been used, with a questionnaire of open and closed questions and a complex system of categories, validated by experts in the field. The results lead us to propose keys to integrate the three categories: interspecific justice, postcolonial and counter-hegemonic gender approach, construction of new human and non-human imaginaries, and teacher training for the development of an ecofeminist pedagogy.

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1. Introduction

Taking critical didactics as a reference, several authors (Porlán, Martín del Pozo, & Martín, 2002; Blömeke, Busseb, Kaiserb, König, & Suhld, 2016) argue that the desirable professional remit of teachers cannot be reduced to the transmission of academic knowledge, but that their role in the classroom must unite elements of disciplinary knowledge with decisions, judgements, thoughts and beliefs that make their praxis effective for the

education of a critical, egalitarian and participatory eco-citizenship (Ancess, Barnett, & Allen, 2007; Elliot, 2010; Rathgen, 2006; Arthur, Davies, & Hahn, 2008; Delgado-Algarra, 2015; Escudero & Martínez, 2016; Eurydice, 2012; Molina, 2013). Therefore, studies on the conceptions of teachers in training are relevant in educational research, both in the field of experimental sciences (Da-Silva, Mellado, Ruiz, & Porlán, 2007; Taylor, 2006) and in the social sciences area (Cuenca & Estepa, 2007; Estepa, Ávila, & Ferreras, 2008; Escudero & Martínez, 2016). In the 90s of the twentieth century, this field of study grew exponentially, becoming an emerging and interdisciplinary field of research, with heritage education as a fundamental content for its interdisciplinary and multidisciplinary approach (Cuenca, Martín, & Estepa, 2020; Fontal & y Ibáñez, 2017).

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Through heritage, teachers can start from the students' reality in order to understand both the present and the past, as the real protagonists of their learning (Cuenca & Estepa, 2007; Simsek & Kesici, 2012; Morón, Trabajo, & Domínguez, 2021). Many authors (Escudero & Martínez, 2016; Olwig, 2005; Lucas & Delgado-Algarra, 2020) have shown that the educational value of heritage lies in the ability of these elements and spaces to invite people to reflect and interpret a specific reality. In addition, international organisations such as UNESCO, 2015, ICCROM or ICOMOS, as well as national plans in different countries around the world, such as the National Plan for Education and Heritage in Spain or the International Cooperation Agency for Development of Colombia (Aecid), Inter-American Development Bank (IDB), Regional Centre for the Safeguarding of the Intangible Cultural Heritage of Latin America (CRESPIAL), Convenio Andrés Bello (CAB), International Council on Monuments and Sites (ICOMOS), International Centre for the Study of the Preservation and Restoration of Cultural Property (ICCROM), among others, have pointed out that cultural heritage is key to the formation of citizenship. Heritage references are the product of space-time-humanity interaction and, therefore, explain what we are, how we are, why we have become that way and how we relate to others (UNESCO, 2016).

Nevertheless, it should be noted that heritage has traditionally been selected and legitimised by a very small part of society (Bendix, Eggert, & Peselmann, 2012; Hafstein, 2012). As Pilar Benejam (1993) pointed out, the selection of the notions that we consider basic due to their social relevance depends, to a large extent, on the theoretical perspective in which we place ourselves to interpret society, so that the acceptance of a scientific interpretation approach determines the type of principles and concepts susceptible to be applied to the study of social reality. In this line, it should be noted that many research works have evidenced the androcentric and anthropocentric construction of historical knowledge (Cruz & Peinado, 2018; García-Luque, 2015, 2016, 2019; Gómez-Ferrer, 2002; Lucas, 2021; Lucas & Delgado-Algarra, 2019; Lucas, García Luque & Delgado-Algarra, 2022; Morant, 2005; Sánchez & Miralles, 2014; Sant & Pages, 2011; Scott, 1990). In the 80s of the last century, when gender began to be introduced in the human and social sciences as an analytical category, one of its first achievements was to break with the biologicist theories that did not establish limits or differences between women and their social role (Novelo, 2005). In this sense, feminist and anti-colonial movements highlighted the need to carry out studies based on hidden keys to heritage, responsible for 'giving value to certain elements and actions of human beings so that they become part of our cultural heritage and worthy of appreciation' (Llorenç, 2005: 22). Likewise, it should be noted that feminist research (Sánchez, 2017; Scott, 1990) has considered that gender, by itself, is not an identity-building category, hence they advocate the study of its interaction from intersectionality with other social categories of analysis (social class, ethnicity, age, sexual orientation, territoriality, species, etc.).

Therefore, working with heritage entails an active process of negotiation and selection of memory, identity and sense of place (Fontal & Marín-Cepeda, 2018; García-Valecillo, 2015, pp. 58–73). The dualisms of gender and heritage/ethnicity and heritage/species and heritage, etc. Are material and immaterial reflections of the worldviews of gender, class and ethnicity, etc. (Lagarde, 1996) and, as such, are to be interpreted. In the words of Sapriza and Viera (2016: 109), it is necessary to 'genericise heritage', in other words, 'to highlight the organisation of society in specific and historical contexts by problematising the mandates attributed to subjects by virtue of their sex-gendered and andro-gendered conditions'. That is why Lucas-Palacios, García-Luque, and Delgado-

Algarra (2022) argue that feminist thought and animal ethics are two key and essential tools when analysing patrimonial processes. These allow us to identify and point out the way in which our heritage naturalises and even encourages practices of discrimination and violence against women, but also against animals, in museums, archaeological sites and cultural traditions, etc.

Authors such as Avrami, Macdonald, Mason, and Myers (2019) have highlighted that the values attributed to heritage can reflect a critical history aimed at improving society and restoring justice; considering alternative narratives in relation to heritage where they take into account the histories of different groups and communities by broadening the gaze to other histories. At this point and in relation to the study objectives set out below, we must ask ourselves: Which conceptions do teachers in initial training in heritage education have for the formation of a critical, egalitarian and participatory eco-citizenship? What knowledge do teachers in initial training have regarding feminist thought and animal ethics to help form a future citizenship aligned with present and future ecosocial problems? Is heritage education an effective interdisciplinary teaching tool to question the androcentric and anthropocentric values of our present and our past?

2. Theoretical framework

The media and the social and experimental sciences show that, in recent years, a series of socio-environmental changes have taken place whose consequences and lines of action are the subject of research within the scientific community and the subject of debate both in the political sphere and by the public at large. Some of these socio-environmental issues are climate change (IPCC et al., 2021), gender inequality, animal suffering and Covid 19, among others. Understanding the importance of citizen participation when facing historical, present and future challenges, one of the educational purposes in the formal education system, within the official curriculum, is linked to the formation of a critical, egalitarian and participatory citizenship. On the other hand, there are voices critical of the idea of improvement through education, such as those of Moran and Kendall (2009), who consider that part of educational research builds naïve assumptions about what education is and should be like. Generally speaking, there are multiple approaches in education, considering the importance of the development of linked competencies, the construction of student knowledge and their participation (Barnes, 2020). In general terms, teaching-learning processes are based on multiple approaches from which to develop processes of reflection and self-reflection. However, teaching does not have an automatic equivalence with learning objectives, just as the teacher puts into practice different ways of approaching socio-environmental problems and controversial issues with their students. The teacher can choose to avoid the controversy, allude to it without generating debate or encourage debate on these issues; in addition, by encouraging debate, he/she can share (or not) his/her position with the students or provide new questions and information to facilitate moderation (López-Facal, 2011, pp. 65–76). Acknowledging the limitations and from the approach to school understood as an engine of social change, this study positions itself with the relevance of including pertinent socio-environmental problems in the teaching-learning process. However, it should be noted that some of these issues have received less attention in formal education. In this sense, Okvuran (2010), 'the reality of school curricula contrasts sharply with what happens in the street' (p. 3820). Escribano (2017), for his part, indicates that, from education, we should address the violence in which we participate, the suffering we cause as consumers, and establish relationships between the choices we make as consumers and the

consequences they have in our own lives and in the lives of other beings.

In parallel, ecological feminism, or ecofeminism, has strengthened its importance as a line of academic research, with an increase in the publication of monographs (Kerslake & Gifford, 2013; Phillips & Rumens, 2016) and of scientific texts (Plumwood, 2004; Warren, 2003; Álvarez, 2021). Ecofeminism emerged in the 70s of the last century as a thought and praxis that analyses our relationship with nature through the keys provided by the gender perspective. It visibilises issues that connect the ecological and feminist struggles, such as overpopulation (D'Eaubonne, 1997), pacifism (Kelly, 1992, pp. 336–352), the impact of environmental degradation on women's lives (Shiva, 1995; Tapia, 2018) or animal abuse and suffering as a result of human actions (Puleo, 2019; Tafalla, 2019; Velasco, 2019). Although there are different currents and numerous thinkers, they all agree in pointing out the multiple links between the domination of women and the domination of nature (Gifford and Sussman, 2012, Gifford and Sussman, 2012; Puleo, 2011). Ecofeminist (Amorós, 2005; Merchant, 1980; Shiva, 1996) and decolonial (McBride, 1992; Wynter, 1996) theories have pointed out that patriarchal society has established that man, culture, reason, mind or the human are superior to woman, nature, emotion, body or animals. Warren (2003) in 'the logic of domination' highlighted the multiple links between the subjection of women and animal exploitation. Likewise, Collard and Conrucci, 1988 emphasised how, from the origins of feminism, special attention was paid to the suffering of animals. For his part, Adams (1995: 14) uses a very enlightening term to refer to the link between sexism and speciesism, 'sex-species system'. Moreover, she argues that this system has not gone unnoticed by many feminists who have decided to eat a vegetarian diet because they feel identified with animals. Echegoyen (2019), Hawkerworth (2006) and Vavrus (2009), among others, go so far as to demonstrate in their studies that, if animals are treated as edible beings, women are treated as sexual objects. So, feminism and the animal liberation movement are connected insofar as the oppressions that each of them tries to fight are based on the same mechanisms of legitimisation of violence. According to Pelluchon (2017), understanding that women and animals are mere bodies or pieces of meat is a strategy typical of the patriarchal hierarchical dualistic thinking that considers it legitimate to dominate whoever is considered inferior.

However, these studies have not permeated the educational field, with other research currents such as feminist materialisms being the ones that have gained more strength (Delgado, Torres, Galarza, Fernández, & Madrigal, 2018). Even so, academic researchers and teachers such as Puleo (2011), Velasco (2019) and Horta (2017) show that bringing critical ecofeminist thought to the field of didactics involves having a theoretical basis for reflecting on environmental sustainability and how human beings relate to other forms of life. Alimi et al. (2021), Otte and Pica-Ciamarra (2021) and Wu (2021), point out that the Covid-19 pandemic has highlighted the need to bring these approaches to education. Along these lines, Espinosa, Tago, and Treich (2020) have shown that the causes underpinning the emergence of these zoonoses are human actions directly or indirectly linked to the human-animal relationship, such as changes in land use, livestock production, wildlife trade or climate change. Moreover, the quality of our relationship with other animals not only exerts a risk factor for the emergence of zoonotic diseases, but is also linked to other global emergencies such as the climate crisis (Poore & Nemecek, 2018; Searchinger et al., 2018) or antimicrobial resistance (O'Neill, 2015). Following this idea, Voltes (2021) explains that speciesism is transmitted in the socialisation process through culture and education, establishing the species boundary as a justification for placing humans above other animals and placing them outside the sphere of

morality. Therefore, this ecofeminist animalist view can contribute to enrichment of the curricular contents of the different areas, but especially of Social Sciences and Heritage Education due to its transdisciplinary approach and its connection to ecosocial problems (Jiménez, Cuenca, & Ferreras, 2010).

2.1. Heritage education to educate in humane education

Humanitarianism arose in the early 19th century, after the crisis of the Industrial Revolution in England; its theoretical basis is based on the affirmation that all human beings deserve respect and dignity and should be treated as such; it condemns slavery, the violation of fundamental rights and discrimination on the basis of characteristics such as skin colour, religion, ancestry or place of birth, etc. Therefore, humanitarians defend the promotion of the welfare of humanity as a whole; it is the antithesis of the 'us versus them' mentality that characterised the industrial and capitalist society of that time—and the current one—and ethnic nationalism (Jarvis, 2009). One of the most relevant ideas of this philosophy is that violent acts among human beings who can be considered vulnerable—such as women, children, people with functional diversity, racialised people, etc.—could be eradicated if we condemn and sanction violence towards non-human animals (Klingberg, 1942). Taking this hypothesis as a starting point, the first Bands of Mercy were created.

The Bands of Mercy were groups of boys and girls that were set up within schools to educate in empathy and respect for animals, with humane education being the central pillar of their normative and methodological bases. The first League was formed by Henry Salt in 1891 (Jarvis, 2009). At the inaugural meeting it was agreed what their main objective was to be:

"The Humane League has been founded on an intelligible and consistent principle of humanity, namely, that it considers it unjust to inflict suffering, directly or indirectly, on any sentient being, excepting those cases in which self-defense or absolute necessity can be justly pleaded." (Henry Sat, s.f.).

They held periodic meetings in which their members told stories about the capacity of animals to feel, sang songs specially written and compiled for these events and committed themselves to developing actions to protect all living creatures. In fact, when a Band of Mercy was formed, its members had to make the following promise: 'I will try to be kind to all living creatures, and I will try to protect them from cruel use'.

In our view, it is important to recover this approach within the framework of coeducation and, through ecofeminist education and antispeciesist education, to provide students with tools to critically interpret their reality and the sexist, cruelty and climate change denialist messages, as well as our relationship with other sentient beings. Cano (2017) advocates backing a new educational paradigm that breaks with the binary ideologies of human/animal, cultural/nature, rational/irrational, masculine/feminine, etc., bringing together feminist and environmentalist concerns to develop a holistic concern for responsibility with life.

Novo (2009) highlights the need to put life at the core of our ethical-political concerns. Moreover, according to Da Silva (2018), introducing ecofeminism in schools contributes to empowering citizens to build a society worth living in, and heritage education is a tool with great educational potential to do so, due to its visual and iconographic character (Tafalla, 2019). The woman-nature and woman-animal association is frequent in numerous iconographic representations of myths, allegories or various symbols that are part of the cultural heritage, in that they not only highlight some defect attributable to the female gender, but also highlighted the

almost 'subhuman' character of women, as reflected in many works of the Ancient and Middle Ages (gargoyles, harpies, sphinxes, sirens, etc., as a symbol of sin and impurity of the human race). We see, therefore, that, in Western art, ethics and aesthetics are traditionally associated and that beauty is generally equated with the good and ugliness with the bad. In this sense, Selwyn (2002) points out the importance of teachers and students knowing how to make a correct interpretation of cultural images and traditions, knowing that they are the product of a given context and that they respond to specific political, social and economic ideas. Applying coeducation to heritage didactics allows us to understand and analyse the codes of conduct in order to highlight all these hegemonic misogynist and sexist messages that lead us to develop counter-narratives that reverse values, placing nature in front of or above culture. This allows for the plunder of nature, the wanton extraction, and the callous disregard for the stability of sustainable ecosystems. In this sense, research results such as those of García Luque (2017); Lucas and Delgado-Algarra (2019); Okvuran (2010); Redon (2019); Simsek and Kesici (2012), which claim the role of heritage coeducation as a key element for the treatment of ecosocial problems in the classroom, are beginning to be presented.

3. Methodology

The study presented here has a mixed research design (Johnson & Onwuegbuzie, 2004) whereby we seek to know and understand the conceptions of students on Early Childhood and Primary Education degree courses, as well as students taking the Master in Secondary Education (hereinafter, MAES), regarding heritage education, feminist thought and animal ethics and the link between them in the Spanish educational context. To this end, on the one hand, a data gathering, we applied a questionnaire designed through Google Forms® and distributed remotely. Regarding the mixed design, quantitative analysis goes through two stages; a descriptive phase (mean, frequency and contingency tables) and a factorial phase (correlations) that enable us to discover latent relationships between variables (Delgado-Algarra & Estepa-Giménez, 2017). This phase of quantitative analysis is not proposed with the aim of generalizing the results. On the other hand, the qualitative analysis leads us to the interpretation of phenomena and the understanding of the relationships between variables.

All in all, the research presented here aims to analyse the connections between heritage education, feminist thought and animal ethics in the thinking of future teachers in early childhood, primary and secondary education, focusing on the Spanish context, responding to the following specific objectives.

- O.1: To reveal the conceptions of the students on ECE, Primary teaching and MAES courses towards heritage education and its role in the formation of a critical and egalitarian citizenship.
- O.2: To ascertain the degree of knowledge of feminist thought among undergraduate students of ECE, Primary Teaching and MAES.
- O.3: To know the conceptions of animal ethics of the students taking ECE, Primary Education and MAES courses.
- O.4: To understand the link between feminism, animal ethics and heritage education in the educational context to achieve an education framed in the sustainable development goals (SDGs).

3.1. Sample

The sample was randomly selected and consists of 162 students of the degrees in ECE, Primary Education and MAES of the universities of Huelva (UHU), Barcelona (UB), Basque Country (UPV-EHU),

Zaragoza (UNIZAR), Santiago de Compostela (USC) and Complutense University of Madrid (UCM). The students, within their respective university degrees, develop the necessary skills to enable them to practise the teaching profession in ECE, primary or secondary education, taking into account knowledge related to educational psychology, general pedagogy and specific didactics.

For the configuration of the selectable population, university teacher-researchers who are part of the research group *Red 14: Red de investigación en enseñanza de Ciencias Sociales* (REF: DU 2014-51720-REDT) and have an academic and professional trajectory in which educational innovation is their strong point, were contacted to forward the questionnaire to their students. The support of the members of the research network facilitated the process of random selection and contact with the student body of the sample for their participation in the present research. However, in order to define the sample (Fowler, 2014), the following aspects were taken into account: the representativeness of the sample frame, the possibility or not of calculating the probability of selection, and the efficiency or ratio by which the population can be represented in the aforementioned sample.

In general terms, we start from the premise that we are not seeking a generalisation of the outcomes, which leads to a selection of the sample that is representative within the population boundedness previously carried out (Goetz & Le Compte, 1988). Thus, regarding the representativeness of the sample frame, first, before the statistical calculations, the criterion that the sample size should be five times the number of questions in the data collection instrument (162 students, 26 items) must be met (Table 1).

Once the data gathering instrument was designed and validated by a team of experts in heritage education and ecofeminist thought, the questionnaire was distributed extensively among the teaching staff of the sample through the Google Docs application.

3.2. Instruments

Setting out from the theoretical framework and the review of the problem, a system of categories (Table 2) was developed, consisting of three categories of analysis related to the three blocks of the questionnaire: heritage education for teaching citizenship, feminist thought and animal ethics. These, in turn, consist of a series of subcategories and descriptors, following the methodology employed by Delgado-Algarra and Estepa-Giménez (2017), Delgado-Algarra et al. (2019), Escudero and Martínez (2016), Martín-Cáceres and Cuenca (2015). In this way, the aspects for which information is to be obtained are delimited. This instrument will serve as a reference for configuration of the questionnaire and for systematisation of the data and information analysis.

The data gathering instrument is a questionnaire validated by experts in the matter. It is a mixed instrument with a predominance of Likert scale response items (1–5), followed by closed-response nominal items and open-response items. The epistemological sources of the "Citizenship and Dimensions of Memory" (CIDIMEN®) and "Citizenship and Plurilingual Social Actor in Higher Education" (CYASPS®) questionnaires (Delgado-Algarra, Bernal-Bravo, & López Meneses, 2019) were used as references when drafting the survey; likewise, the indications provided by Carrillo, Coriat, and Oliveira (1999) and Galindo (1996). Thus, the "Heritage Education for Citizenship Teaching" block consists of 21 Likert-type items, 16 short-answer items ("Yes", "No", "Don't know") and one open-response item. The "Feminist Thinking" block consists of 21 Likert-type items, 4 short-answer items ("Yes", "No", "Don't know") and two open-ended items. Finally, the "Animal Ethics" block consists of 12 Likert-type items, 4 short-answer items ("Yes", "No", "Don't know") and one open-response item. To minimise the effect of responses based on social desirability and to ensure that

Table 1
Sample.

		Frequency	Percentage	Valid percentage	Accumulated percentage
Valid	University of Huelva	80	49,4	49,4	49,4
	Complutense University of Madrid	59	36,4	36,4	85,8
	University of Barcelona	19	11,7	11,7	97,5
	International University of Andalusia	4	2,5	2,5	100,0
	Total	162	100,0	100,0	

Table 2
Categories, subcategories and descriptors.

Categories	Subcategories	Descriptors
I. Heritage ed. for Citizenship Teaching	Initial training level	Students with no heritage training. Students claiming to have received heritage training transversally as part of another subject. Students having taken a specific heritage subject.
	Heritage Education knowledge level	Knowledge of heritage for its monumental, aesthetic or historical character. Knowledge of all types of heritage (historical, artistic, industrial, ethnological, etc.) but without relating it to a community's sense of identity. Recognition and appreciation of one's own and other people's culture in the material, immaterial and even spiritual elements that characterise a society.
	Valuation of Heritage Education as Social Sciences content	Not considered as content for Social Sciences. Use of heritage for the narration of historical facts, dates and characters without a critical reflection on gender inequalities and violence throughout history. Use of heritage as a resource to work on and interpret social inequalities and gender identities throughout history.
ii. Feminist thinking	Initial training level	Students without gender training. Students claiming to have received gender training transversally as part of another subject. Students having taken a specific gender subject.
	Knowledge of the feminist movement	Consideration of feminism as a street movement and unrelated to its theoretical and scientific contributions. Androcentric vision. Superficial knowledge of sex-gender theories, gender roles, identities, female-male binary approach ... Gender as a school or perspective that questions the approaches of traditional history and its androcentric character.
	Valuation of the feminist movement's contribution to Social Sciences	Androcentric outlook (story of important men). Presents only exceptional women as an adjunct to the androcentric narrative. Differential social consideration of women. We do not necessarily have to know the works created by women, but we do have to question the single vision of traditional history and gender as a social construction that leads to exclusion. Presents a view of feminist theories through the prism of critical didactics. Promotes a reflection on non-binary identities: Queer, LGTBI+, cis ...
iii. Animal ethics	Initial training level	Students with no training in the environmental or animal rights movement. Students who claim to have taken part in associations, NGOs or groups in defence of the planet. Students who have attended courses on veganism, environmentalism, anti-speciesism, animalism, etc.
	Level of knowledge of the animal movement	Consideration of animals as inferior species and at the service of the human species. Differentiated consideration between domestic and non-domestic animals. Knowledge of <i>anti-speciesist</i> thought and animal ethics.
	Valuation of the animal movement as Social Sciences content	Not considered as content for Social Sciences. Recognition of environmental education, but not related to animal ethics. Animal ethics should be a school content for working on and interpreting the inequalities between species and care of the planet.

Source: own creation.

respondents answered according to what they thought the researchers' position might be, anonymity was guaranteed throughout the process.

For reasons of space and the limitations imposed on the publication of this type of research, we limit ourselves to presenting the results of the third subcategories and the degree of relationship between them: "Valuation of Heritage Education as Social Sciences Content", "Valuation of the feminist movement's contribution to Social Sciences", "Valuation of the animal movement as Social Sciences content".

4. Results

Based on the three subcategories, this section presents the most relevant results of the descriptive analysis and factor analysis. The sample size is adequate, and both Bartlett's sphericity index and the

Kaiser-Meyer-Olkin (KMO) sample adequacy measure shown in Table 3 provide values that indicate that factor analysis is an excellent idea (Bisquerra, 2000; Hair, Black, Babin, Anderson, & Tatham, 2005, 2005; Hoaglin, Mosteller, & Tukey, 1991).

To extract the factors that explain the system, only those with an eigenvalue >1 and which represented more than 70% of the variance were considered, as required by the literature for this type of study (Catena et al., 2003). This way, the items selected for the

Table 3
Kaiser-Meyer-Olkin (KMO) sample adequacy and Bartlett sphericity test.

Kaiser-Meyer-Olkin Sampling Adequacy Measure.		.810
Bartlett's Sphericity Test	Approximate Chi-square	1696,579
	GI	325
	Sig.	<.001

subcategory “Valuation of Heritage Education as Social Sciences content” were.

- Q.2.1. Heritage is not an important content in Social Sciences classes.
- Q.2.5. In Social Sciences classes, heritage is a good didactic tool to investigate the sociocultural characteristics of a territory.
- Q.2.6. In Social Sciences classes, heritage is crucial to understanding the social inequalities that have existed throughout history.
- Q.2.7. In Social Sciences classes, heritage is a good didactic tool to deal with gender identity as a social construct.
- Q.3.1. The best way to learn citizenship is through visits outside the classroom (museums, monuments, archaeological sites, etc.).
- Q.3.2. The best way to learn citizenship is by analysing images, documents, drawings about our constitution, electoral rights, citizens' demonstrations, etc.
- Q.3.3. The best way to learn citizenship is by watching a film or documentary related to environmental protection and animal ethics.
- Q.3.4. The best way to learn about citizenship is by watching a film or documentary related to feminist thought.
- Q.3.5. The best way to learn citizenship is by carrying out a project to protect an endangered heritage element of your city.
- Q.3.7. The best way to learn citizenship is through a teacher's explanation.

The items selected for the subcategory “Valuation of feminist thinking as Social Sciences content” are as follows.

- Q.5.3. Feminism is the thinking of women who hate men.
- Q.5.4. Feminism is a social movement that seeks the superiority of women over patriarchy.
- Q.6.4. Androcentrism does not exist.
- Q.7.1. Feminist thought is the best way to learn citizenship through knowledge of its theory, characteristics and historical evolution.
- Q.7.2. Feminist thinking is an effective didactic tool to make gender inequalities in today's society visible.
- Q.7.3. Feminist thought is an effective didactic tool for analysing the androcentric canon as a cause of social inequalities (not only gender inequalities, but also race, religion, etc.).
- Q.7.4. Feminist thinking has nothing to do with education, nor should it.
- Q.7.5. Feminist thinking in education relates to the introduction of exceptional women in the classroom.
- Q.7.6. Feminist thought makes us question the single vision of traditional history and gender as a social construct that leads to exclusion.
- Q.7.7. The introduction of feminist thinking in education promotes a reflection on non-binary identities: Queer, LGTBI+, Cis ...

Lastly, the items in the subcategory “Valuation of the animal movement as Social Sciences content” were.

- Q.8.1. Animal ethics is a movement in defence of domestic animals as sentient beings.
- Q.8.2. Animal ethics is a movement in defence of non-domestic animals as sentient beings.
- Q.9.1. Animals are an inferior species and at the service of the human species.
- Q.9.3. Animals have fewer rights than the human species.

Table 4 Statistical results of the first block of questions on “Valuation of Heritage Education as Social Sciences content”.

	q.2.1. Heritage is not an important content in Social Sciences classes	q.2.5. In Social Sciences classes, heritage is a good didactic tool to investigate the sociocultural characteristics of a territory	q.2.6. In Social Sciences classes, heritage is crucial to understanding the social inequalities that have existed throughout history	q.2.7. In Social Sciences classes, heritage is a good didactic tool to deal with gender identity as a social construct	q.3.1. The best way to learn citizenship is through visits outside the classroom (museums, monuments, archaeological sites, etc.)
N	Valid 162 Lost 0	162 0	162 0	162 0	161 1
Mean	1,94	4,60	4,30	4,12	4,58
Deviation	1,245	,691	,820	1014	,746
N	q.3.2. The best way to learn citizenship is by analysing images, documents, drawings about our constitution, electoral rights, citizens' demonstrations, etc.	q.3.3. The best way to learn citizenship is by watching a film or documentary related to environmental protection and animal ethics	q.3.4. The best way to learn about citizenship is by watching a film or documentary related to feminist thought	q.3.5. The best way to learn citizenship is by carrying out a project to protect an endangered heritage element of your city	q.3.7. The best way to learn citizenship is through a teacher's explanation
Valid	161	161	162	161	160
Lost	1	1	0	1	2
Mean	4,23	4,20	4,13	4,48	3,67
Deviation	,875	,934	1016	,859	,995

- Q.9.4. Animals serve humans as a resource: food, companionship, property ...
- Q.9.6. Animals are another species with which we should share the world and they should have the same rights as the human species.

Regarding the first block (Table 4) of items (q.2.1, q.2.5, q.2.6, q.2.7, q.3.1, q.3.2, q.3.3, q.3.4, q.3.5), we can see that the majority of the respondents show a high degree of agreement in considering heritage education to be an important content in Social Science classes (q.2.1, q.2.5, q.2.6 y q.2.7), with q.2.5, "Heritage is a good didactic tool to investigate the sociocultural characteristics of a territory" the highest scoring item (average 4.60).

Likewise, item q.2.7, "Heritage is a good didactic tool to deal with gender identity as a social construct" has a high score (average 4.12) (Table 5), which leads us to suspect that feminist thought may have an important place in the thinking of the study participants.

In relation to the methodology used to teach citizenship (q.3.1, q.3.2, q.3.3, q.3.4, q.3.5, q.3.6, q.3.7), the data show that the highest percentage of responses falls on item q.3.1, "The best way to learn citizenship is through visits outside the classroom (museums, monuments, archaeological sites, etc.)" (Fig. 1), showing that heritage has an important didactic value for our respondents.

Focusing on the second subcategory for analysis, "Valuation of feminist thinking as Social Sciences content", and taking into account the frequencies, between 85% and 70% of future teachers show high or very high levels in considering that "Incorporating feminist thought into the social sciences teaching-learning process enriches it" (q.7.2, q.7.3 and q.7.5) (average 4.28; 4.01 and 4.13 respectively). The lowest percentages were found for q. 5.3, "Feminism is thinking of women who hate men" and q.5.4, "Feminism is a social movement that seeks the superiority of women over patriarchy." (Table 6, Figs. 2–4).

As for the third subcategory, "Valuation of the animal movement as Social Sciences content" (q.8.1, q.8.2, q.9.1, q.9.3, q.9.6), with an average of 3.69, q.9.6, "Animals are another species with which we should share the world and they should have the same rights as the human species", indicates that future teachers show a high degree of appreciation for incorporating the animal movement into education (Table 7). This idea is corroborated by the response percentages achieved in q.9.1, "Animals are an inferior species and at the service of the human species" (Fig. 5).

Some of the correlations obtained between the three subcategories (Fig. 6) were very significant. Item q.2.5, "Heritage is a good didactic tool to investigate the sociocultural characteristics of a territory" has very high correlations with q.2.6, "In Social Sciences classes, heritage is fundamental to understand the social inequalities that have existed throughout history" (0.588**) and with q.2.7, "In Social Sciences classes, heritage is a good didactic tool to deal with gender identity as a social construct." (0.605**). There is also an interesting correlation with item q.7.2, "Feminist thinking is an effective didactic tool to make gender inequalities in today's society visible" (period 435**).

On the other hand, q.7.2 correlates strongly with q.3.4, "The best

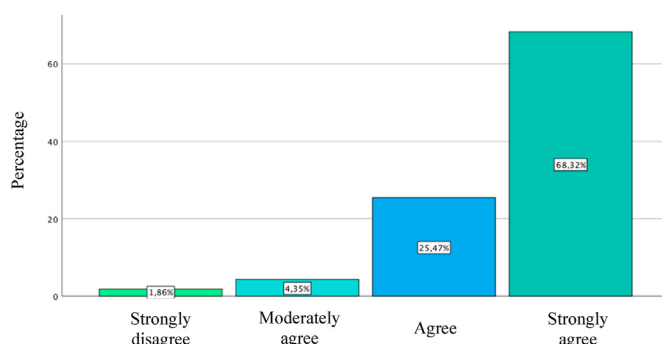


Fig. 1. Statistical frequency of q.3.1. "The best way to learn citizenship is through visits outside the classroom (museums, monuments, archaeological sites, etc.)."

way to learn citizenship is by watching a film or documentary related to the claims of feminist thought" (q.3.4)." (0.559**) and q.7.1, "Feminist thought is the best way to learn citizenship through knowledge of its theory, characteristics and historical evolution" (.572**). In turn, q.7.1 has an average correlation with q.9.6, "Animals are another species with which we should share the world and they should have the same rights as the human species" (0.389**) which also establishes an interesting correlation with q.3.4, "The best way to learn about citizenship is by watching a film or documentary related to feminist thought" (.318**).

In relation to the subcategory 'valuation of the animal movement as content of the Social Sciences' and as reflected in Table 8, there are low but significant correlations between its items and with items of the subcategory "Valuation of feminist thinking as Social Sciences content". However, we found no correlations with the items of the subcategory "Valuation of Heritage Education as Social Sciences content". This is interesting, because it indicates that although the people surveyed value introducing the ideas of the animal movement into education, they do not establish a relationship between this movement and heritage education. Item q.9.6, "Animals are another species with which we should share the world and they should have the same rights as the human species" has medium to low, but very revealing correlations with q.7.1, "Feminist thought is the best way to learn citizenship through knowledge of its theory, characteristics and historical evolution" (398**), q.7.2, "Feminist thinking is an effective didactic tool to make gender inequalities in today's society visible" (0.236**), q.7.3, "Feminist thought is an effective didactic tool for analysing the androcentric canon as a cause of social inequalities (not only gender inequalities, but also race, religion, etc.)" (0.206**) and q.7.7, "The introduction of feminist thinking in education promotes a reflection on non-binary identities: Queer, LGTBI+, Cis ..." (.216**). Finally, there are high and very high correlations between q.9.1, "Animals are an inferior species and at the service of the human species" and q.9.3, "Animals have fewer rights than the human species" (0.596**), and between q.8.1, "Animal ethics is a movement in defence of domestic animals as sentient beings" and q.8.2,

Table 5
Item results q. 27. Heritage is a good didactic tool to deal with gender identity as a social construct.

		Frequency	Percentage	Valid percentage	Accumulated percentage
Valid	Strongly disagree	4	2,5	2,5	2,5
	Disagree	5	3,1	3,1	5,6
	Moderately agree	35	21,6	21,6	27,2
	Strongly agree	41	25,3	25,3	52,5
	Agree	77	47,5	47,5	100,0
	Total	162	100,0	100,0	

Table 6
Statistical results of the first block of questions on “Valuation of feminist thinking as Social Sciences content”.

		q.5.3. Feminism is the thinking of women who hate men	q.5.4. Feminism is a social movement that seeks the superiority of women over patriarchy	q.6.4. Androcentrism does not exist	q.7.1. Feminist thought is the best way to learn citizenship through knowledge of its theory, characteristics and historical evolution	q.7.2. Feminist thinking is an effective didactic tool to make gender inequalities in today's society visible
N	Valid	162	162	162	162	162
	Lost	0	0	0	0	0
Mean		1,20	1,40	1,56	3,62	4,28
Deviation		,588	,888	,870	1064	,921
q.7.3. Feminist thought is an effective didactic tool for analysing the androcentric canon as a cause of social inequalities (not only gender inequalities, but also race, religion, etc.)						
N	Valid	162	162	162	162	162
	Lost	0	0	0	0	0
Mean		4,01	1,38	4,13	3,91	3,75
Deviation		1089	,842	1058	1213	1192
q.7.4. Feminist thinking has nothing to do with education, nor should it						
q.7.5. Feminist thinking in education relates to the introduction of exceptional women in the classroom						
q.7.6. Feminist thought makes us question the single vision of traditional history and gender as a social construct that leads to exclusion						
q.7.7. The introduction of feminist thinking in education promotes a reflection on non-binary identities: Queer, LGTBI+, Cis ...						

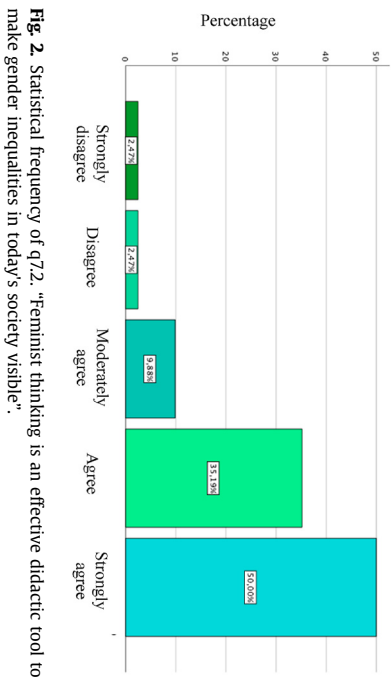


Fig. 2. Statistical frequency of q7.2. “Feminist thinking is an effective didactic tool to make gender inequalities in today's society visible”.

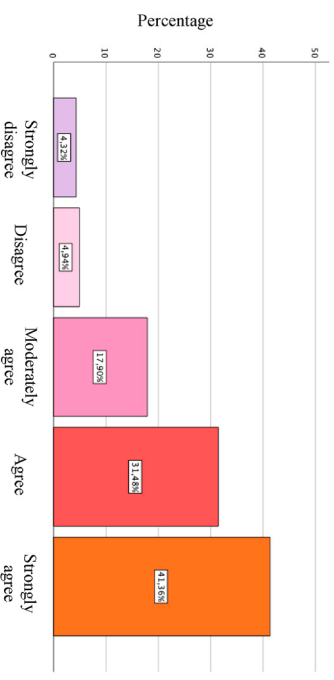


Fig. 3. Statistical frequency of q7.3. “Feminist thought is an effective didactic tool for analysing the androcentric canon as a cause of social inequalities (not only gender inequalities, but also race, religion, etc.)”.

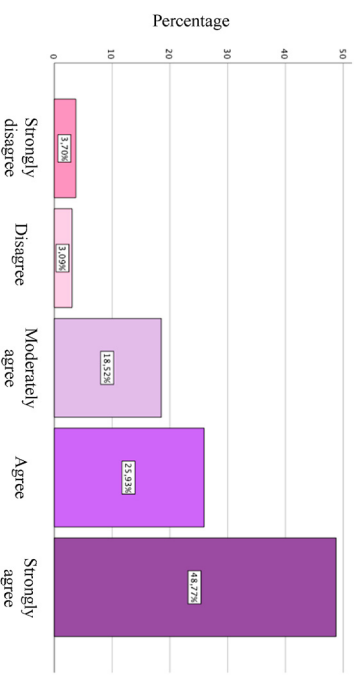


Fig. 4. Statistical frequency of q7.5. “Feminist thinking in education relates to the introduction of exceptional women in the classroom”.

“Animal ethics is a movement in defence of non-domestic animals as sentient beings” (0,774**).

5. Discussion

In the 1990s, heritage education became a line of research that has since grown exponentially (Fontal & y Ibañez, 2017), but it was during the early years of the 21st century that this research was transferred to the classroom, as its didactic value in formal, informal and non-formal settings was acknowledged (Cuenca & Estepa, 2007). Within these good practices, the reference criterion is based on the consideration of heritage education as a factor that enhances citizenship training in students from an interdisciplinary perspective (Sinsek & Kesici, 2012).

Table 7
Statistical results of the first block of questions on "Valuation of the animal movement as Social Sciences content".

	q.8.1. Animal ethics is a movement in defence of domestic animals as sentient beings	q.8.2. Animal ethics is a movement in defence of domestic animals as sentient beings	q.9.1. Animals are an inferior species and at the service of the human species	q.9.3. Animals have fewer rights than the human species	q.9.4. Animals serve humans as companionship, property ...	q.9.6. Animals are another species with which we should share the world and they should have the same rights as the human species
N	Valid 162 Lost 0	Valid 162 Lost 0	Valid 162 Lost 0	Valid 162 Lost 0	Valid 162 Lost 0	Valid 162 Lost 0
Mean	3,45	3,38	1,85	2,51	2,89	3,69
Deviation	1310	1379	1101	1277	1314	1089

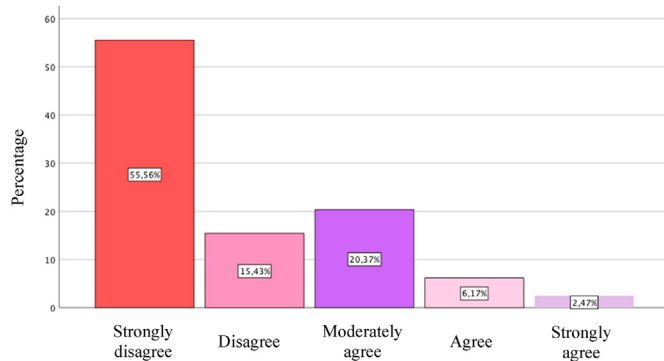


Fig. 5. Statistical frequency of 9.1. "Animals are an inferior species and at the service of the human species".

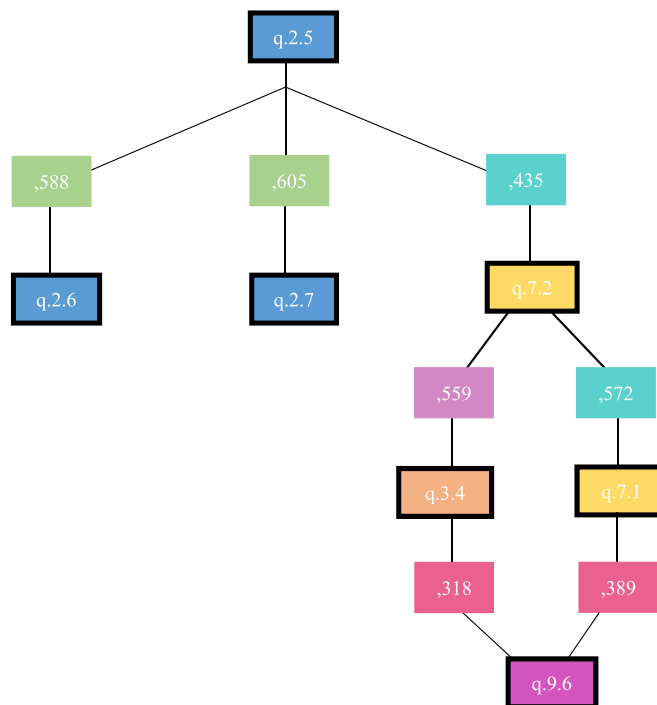


Fig. 6. Correlational structure of valuation of the animal movement as Social Sciences content.

In relation to the first specific objective set out at the start of this research, *O.1: To reveal the conceptions of the students on ECE, Primary teaching and MAES courses regarding heritage education and its role in the formation of a critical and egalitarian citizenship*, it was found that, in general, future teachers consider that heritage education is an important content and didactic tool for teaching citizenship, establishing strong connections with feminist thought. So, our findings are in line with those of [Cacheda \(2019\)](#), [García Luque \(2017\)](#), [Lucas-Palacios, García-Luque, and Delgado-Algarra \(2022\)](#)¹ and [RK&A \(2018\)](#), who advocate the role of heritage coeducation as a key element for the training of a critical and egalitarian citizenship.

Similarly, international governmental institutions are particularly interested in considering heritage as an essential educational

¹ Lucas, L. and Delgado-Algarra, E. (2019). Coeducation in heritage education. Results of a case study. *Enseñanza de las Ciencias Sociales* (18), 5–15.

Table 8
Correlations of items from the third block “Valuation of the animal movement as Social Sciences content”.

		q7.1	q7.2	q7.3	q7.4	q7.5	q7.6	q7.7	q8.1	q8.2	q9.1	q9.3	q9.4	q9.6
q8.1	Pearson correlation	0,129	0014	-0,028	-0,020	-0,042	0083	-0,074	1	,774**	-0,029	-0,053	0011	0,091
	Sig. (bilateral)	0,102	0859	0,723	0804	0,592	0292	0,351		0,000	0714	0,499	0887	0,247
	N	162	162	162	162	162	162	162	162	162	162	162	162	162
q8.2	Pearson correlation	0,139	0087	0,031	-0,082	-0,038	,161*	0,003	,774**	1	-0,022	-0,077	-0,011	0143
	Sig. (bilateral)	0,079	0271	0,691	0299	0,627	0041	0,974	0000		0,779	0332	0,893	0070
	N	162	162	162	162	162	162	162	162	162	162	162	162	162
q9.1	Pearson correlation	-,210**	-,294**	-,212**	,244**	-0,148	-0,098	-,172*	-0,029	-0,022	1	,596**	,503**	-,450**
	Sig. (bilateral)	0,007	0000	0,007	0002	0,060	0213	0,029	0714	0,779		0,000	0000	0,000
	N	162	162	162	162	162	162	162	162	162	162	162	162	162
q9.3	Pearson correlation	-,230**	-0,122	-0,096	0062	-0,068	-0,023	-,208**	-0,053	-0,077	,596**	1	,464**	-,504**
	Sig. (bilateral)	0,003	0123	0,224	0432	0,391	0768	0,008	0499	0,332	0000		0,000	0000
	N	162	162	162	162	162	162	162	162	162	162	162	162	162
q9.4	Pearson correlation	-,173*	-0,123	-0,065	,195*	-0,030	-0,092	-0,086	0011	-0,011	,503**	,464**	1	-,337**
	Sig. (bilateral)	0,028	0118	0,414	0013	0,707	0245	0,279	0887	0,893	0000	0,000		0,000
	N	162	162	162	162	162	162	162	162	162	162	162	162	162
q9.6	Pearson correlation	,389**	,236**	,206**	0,049	-0,040	0040	,216**	0,091	0143	-,450**	-,504**	-,337**	1
	Sig. (bilateral)	0,000	0002	0,009	0537	0,615	0610	0,006	0247	0,070	0000	0,000	0000	
	N	162	162	162	162	162	162	162	162	162	162	162	162	162

element in education as an agent of socialisation and change. UNESCO has different programmes in place (Calaf, Gutiérrez, & Suárez, 2020) and in the New European Agenda for Culture (the 2030 Agenda), Heritage Education is one of the main sustainable development goals (SDGs) (European Commission, 2018):

By 2030, 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. (European Commission, 2018: 4)

In other words, in line with our research findings, state and international education and cooperation policies are stressing the importance of educating for equal citizenship, underlining the fundamental role that heritage education plays in achieving sustainable development goals (SDGs), given the close educational relationship it establishes with gender issues and environmental concerns.

As for O.2: *To ascertain the degree of knowledge of feminist thought among undergraduate students of ECE, Primary Teaching and MAES*, the data obtained coincide with the results of the research conducted by Searchinger et al. (2018), which demonstrated the willingness of teaching staff to implement coeducation in the classroom. In this line, Sleeter, 2008 showed that future teachers, in general, recognise that feminist thinking is an effective didactic tool to work on gender inequalities in the classroom, and noted that among the main concerns of these students in terms of their professional future is that of educating to alleviate climate change, in which the unlimited exploitation of animals coexists with multiple oppressions of human beings based on gender, race, sexual orientation, etc.

These conclusions converge with those of our study, where there is a significant correlation between feminist thinking and respect for animals to form a critical and egalitarian citizenship. Essentially, and in response to O.3: *To know the conceptions of animal ethics of the students taking ECE, Primary Education and MAES courses*, respondents believe that both feminism and animal ethics are important content in the classroom in order to educate future citizens within a framework of ecological sustainability and respect for life. According to Balza (2018), ecofeminism today points out the

similarities between the exploitation of animals and that of women in prostitution and in the renting of wombs for surrogate gestation of human babies. Thus, Velasco (2019) argues that understanding the strategy of patriarchal dualistic thinking of seeing women and animals as bodies or pieces of meat is what would delegitimise this notion of dominating those who are considered inferior, and that it would be necessary to include ecofeminist ideas in school and teaching programmes. In this sense, Zeichner and Conklin (2008) provide an important reflection in their study, as they present one of the central problems that remains in universities and higher education institutions in initial teacher training, i.e., the disconnection between the knowledge offered in university courses and social reality. Assadourian, 2017² analyses how Education - especially formal Education - will have to evolve in order for young people to acquire the most useful knowledge to survive on a planet that is undergoing very rapid ecological changes. And he argues, they are those that lead to systemic-critical thinking in order to be able to analyse the inherited historical inequalities still in place.

Finally, addressing O.4: *To understand the link between feminism, animal ethics and heritage education in the educational context to achieve an education framed in the sustainable development goals (SDGs)*, the data obtained reflect that although our initial training students show strong correlations between heritage education and feminist thought, and also show a certain connection between feminist thought and animal ethics, they do not find a relationship between the latter and heritage education. Ecological feminism or ecofeminism has become established as a field of research of great importance within the landscape of so-called cultural studies (Gifford & Sussman, 2012a, 2012b), and in recent years all these studies have permeated the field of education, especially in the Didactics of Experimental Sciences. Thus, Zell (1998) and Anderson, Hussénius and Gustafsson (2009) have put forward concrete proposals, and Echegoyen (2019) designed didactic materials with a transdisciplinary approach in which environmental education and literary education are connected (Martín & Echegoyen, 2020; Martos, Campos, & Mar tinez, 2017). In heritage education, we did not find any educational proposals that include ecofeminism among their postulates. Only the study carried out by Lucas, Arroyo and Trabajo (Aula Abierta/Open Classroom) in 55 Spanish ecomuseums explores these issues and offers us a proposal in which

² Erik Assadourian is a senior partner of the Worldwatch Institute and director of The State of the World 2017 and EarthEd (Earth Education) project.

ecofeminism and heritage education go hand in hand to form an ecodemocratic and egalitarian citizenship.

6. Conclusions: keys to formation of eco-citizenship based on heritage coeducation

Taking into account that the results and conclusions are not intended to be extrapolated or universal, the correlational structures obtained on the basis of constant criteria facilitates to propose future lines of research and educational action that can be resolved and analysed in other contexts. In other words, this proposal is mainly for the Spanish context, but could also be relevant for other. Thus, we propose three lines to follow in order to educate in ecofeminist animalistic thinking based on heritage in initial teacher training.

- Teachers in initial training consider heritage education to be an important content and didactic tool for teaching citizenship, establishing strong connections with feminist thought. Therefore, it would be advisable to incorporate a compulsory subject on gender education in the curricula of the Bachelor's Degrees in Education and Master's Degrees in Teaching, heritage being an educational element of potential value to do so.
- Likewise, this study has shown that the subjects studied consider that having knowledge of feminist thought is necessary as future teachers in order to be able to work effectively on gender inequalities in the classroom. In this sense, it should be noted that, currently, from academic feminism, gender is not only incorporated as another category to the current contents, as a holistic change is sought in the way of constructing historical knowledge from intersectionality, in order to generate inclusive discourses capable of breaking silences and crossing the compact wall of the academy to reach the citizenship. For this reason, it is important to focus attention also on the methodology of knowledge transmission, that is, on the strategies of education and dissemination from a gender perspective.
- In addition, the people surveyed believe that both feminism and animal ethics are important contents in the classroom in order to educate future citizens within a framework of ecological sustainability and respect for life. As Herrero (2015) points out, human beings are eco-dependent beings, since we are one of the species that inhabit the Earth and, like all of them, we depend on nature to sustain life, and interdependent beings, as throughout our lives we need physical and emotional care from other people. These dependencies have been made invisible in the social, production and economic systems of patriarchy, among other reasons, because those who have traditionally been responsible for personal care and care of nature, ecosystems and non-human animals have been—and are—women (Tardón, 2011). Therefore, it is necessary to promote a critical ecofeminist pedagogy in teacher training that breaks with the hierarchical dualisms that have disconnected humanity from its environment.

Author contributions

Laura Lucas Palacios: Writing- Original draft preparation
 Conceptualization, Methodology, data curation Emilio J. Delgado-Algarra.: Methodology, Data curation, Writing - Review & Editing.
 Mónica Trabajo Rite: Conceptualization, Writing - Review & Editing.

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Data availability

The data that has been used is confidential.

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