



OPEN ACCESS

EDITED BY

Gisela Cebrián,
University of Rovira i Virgili, Spain

REVIEWED BY

Alison Laurie Neilson,
New University of Lisbon, Portugal
Alison Cantos Egea,
University of Rovira i Virgili, Spain

*CORRESPONDENCE

Ferran Crespo i Torres
✉ f.crespoitorres@ub.edu

RECEIVED 31 July 2025

ACCEPTED 26 September 2025

PUBLISHED 20 October 2025

CITATION

Crespo i Torres F, Novella Cámara AM and Sabariego Puig M (2025) From training to action: addressing training needs in environmental education for child-led participation with adult support. *Front. Educ.* 10:1677023. doi: 10.3389/feduc.2025.1677023

COPYRIGHT

© 2025 Crespo i Torres, Novella Cámara and Sabariego Puig. This is an open-access article distributed under the terms of the [Creative Commons Attribution License \(CC BY\)](#). The use, distribution or reproduction in other forums is permitted, provided the original author(s) and the copyright owner(s) are credited and that the original publication in this journal is cited, in accordance with accepted academic practice. No use, distribution or reproduction is permitted which does not comply with these terms.

From training to action: addressing training needs in environmental education for child-led participation with adult support

Ferran Crespo i Torres^{1,2*}, Ana María Novella Cámara^{2,3,4} and Marta Sabariego Puig^{4,5}

¹Department of Language, Science, and Mathematics Education, University of Barcelona, Barcelona, Spain, ²Moral Education Research Group (GREM), University of Barcelona, Barcelona, Spain,

³Department of Theory and History of Education, University of Barcelona, Barcelona, Spain, ⁴Institut de Recerca en Educació (IREUB), University of Barcelona, Barcelona, Spain, ⁵Department of Methods of Research and Analysis in Education, University of Barcelona, Barcelona, Spain

Introduction: Environmental education is conceived as a critical social practice aiming to foster an knowledgeable, participatory citizenship capable of taking on contemporary ecological and social challenges. However, although different international frameworks define it as a lifelong process of education for participation and action, the participation of children and adolescents and the accompaniment we provide as educators continue to present challenges. This study investigates the barriers and training needs encountered by environmental educators in Catalonia in boosting child and youth participation in their professional practice, in the light of the diversity of educational settings and situations in the field.

Methods: A pragmatic participatory approach was adopted in which a group of 10 participants took part in four participatory workshop sessions to inquire, from the standpoint of their concrete situations, into the challenges they faced as educators and in environmental education as a subject, in addition to their training needs for embracing child and youth participation in their practice.

Results: Results revealed multiple challenges: reconnecting children with the urban natural environment; developing the critical and political capacity to address eco-social conflicts; lack of training for encouraging transformative action; and structural issues such as the absence of an established competency framework, professional instability, job insecurity, and bureaucratic rigidity. Also, a number of training needs were identified, including: systematically conceptualizing and recognizing the value of child participation; mastering methodologies to facilitate participatory, empowering support; networking and knowledge of community resources offering tools for the inclusion of all students. Lastly, the results showed that participatory workshops are a useful tool not only for data-gathering, but also for the professional education and development of their participants.

Discussion: Our findings reveal a gap between the founding principles of environmental education and actual professional practice, stressing the urgent need for situated, reflexive, dialogic educator training that will strengthen critical competencies, foster children's agency, and legitimize the environmental educator as a specialized professional capable of combining theoretical

knowledge, participatory methodologies, and critical reflection, thereby contributing to an inclusive, transformative eco-social citizenship in which children are included.

KEYWORDS

environmental education, child participation, educator training, educational needs, participatory methodologies, eco-social citizenship

1 Introduction

From its initial definitions (Stapp, 1969; United Nations Environment Programme, 1975), environmental education has focused on building citizenship, aiming to educate people who are knowledgeable about their biophysical environment and its problems and have the skills and motivation necessary to work toward solving them (Stapp, 1969). Looking back to the United Nations Environment Programme (1975), we find that, apart from constructing citizenship, participation appears as a key orientation and objective in the field. From the outset, then, participation has been directed toward identifying and solving environmental problems (United Nations Environment Programme, 1975). Understanding the field as a form of education both for and throughout life, here we advocate participation beginning well before the age of majority and building citizenship through plurality, recognizing the role and participation of children in this endeavor and in solving current complex socio-environmental problems, as called for in the UNESCO document “Reimagining our future together” (International Commission on the Futures of Education, 2021):

The new social contract for education must unite us around collective endeavors and provide the knowledge and innovation needed to shape sustainable and peaceful futures for all anchored in social, economic and environmental justice, p. 11.

The manner in which these issues are confronted in the search for solutions not only challenges us from scientific or ecological perspectives, but also demands profound transformations in what it means to be a citizen today. “Objective” knowledge about ecological issues is insufficient to promote a genuine paradigm shift (Tapia González, 2023). Environmental education faces various contemporary challenges in the construction of citizenship, and from our field, several possible responses have emerged (Nieto-Ramos et al., 2025). According to Nieto-Ramos et al. (2025), on the one hand, there are responses that maintain the current socioeconomic system within a weak sustainability paradigm (García Díaz et al., 2019), such as Education for Sustainable Development or Education for Sustainability. On the other hand, there are proposals that operate within strong sustainability frameworks, wherein Ecosocial Education or Environmental Education for Degrowth explicitly acknowledge the inevitable need to address degrowth in an orderly and socio-environmentally just manner.

Currently, despite the conceptual and methodological diversity characterizing environmental education – defined by Gutiérrez-Bastida (2019) as a polymorphic process – some of its essential features remain constant: the formation of a critical citizenship, with knowledge, attitudes, and skills for the analysis of socio-environmental issues, active participation, and commitment to eco-social

transformation. Here we understand environmental education as a critical social practice (Caride and Meira, 2001) that is multidimensional and committed to developing citizens’ critical awareness and their participation in collective transformation in an inclusive and intergenerational manner. Therefore, we would define it in the following terms:

We see environmental education [...] as an education that is: political and positioned; for scientific literacy; problematizing, dialectical and interdisciplinary; social and lifelong; humanistic and community-based, focused on interculturality; for transformation; for an ethics and culture of sustainability; and for citizen participation and practice (Crespo i Torres, 2024, p. 58).

Consequently, our understanding of Environmental Education is that which, in accordance with Tapia González (2023), goes beyond purely scientific or conservationist approaches to incorporate social, ethical, and political dimensions, including gender perspectives and social justice. It is, therefore, inseparable from the critical, ethical, and political dimension of citizenship formation (Sauvé, 2013, 2014). Limón-Domínguez and Alcántara-Rubio (2019) propose a civic ethics articulated through the intersection between environmental ethics and the ethics of care, in which care, community, autonomy, and, once again, participation, are placed at the center of the proposal. Thus, it is the task of Environmental Education to confront the current economic paradigm through the recognition of eco-dependence and interdependence (Herrero, 2022). And it is a challenge, given that “the predominant environmental education still fails to foster a critical awareness of gender roles and to make women visible both as victims of the ecological crisis and as protagonists of a shift toward a culture of sustainability” (Puleo, 2019, p. 55).

Taking all this into account, we share the view that environmental education is concerned with the politics and should go beyond political parties it is concerned with the political, and continues to search critically for foundations and goals enabling educational action to become a path for action in the community (Sauvé, 2006). This dialog is especially necessary in a global context in which discourses of denial and regressive policies on environmental issues are emerging, as Hultman (2020) warns, referring to the ecocide promoted by ultra-right nationalist sectors, who find in climate denial a means of perpetuating ruling-class hegemony. If, as Sauvé (1999) states, environmental education has been redefined on the basis of responses to controversial situations in a context of critical coexistence where crises in society and the environmental, knowledge, and values combine (Bonil et al., 2010), it should come as no surprise that today we are engaged in intense debate on what kind of citizenship we want and who should lead the way in building it. This debate should be a great opportunity to assert both cultural and ecological diversity, challenging the monocultures of the mind (Shiva, 2008) that

particularly affect Indigenous peoples, peasant communities, and non-institutionalized forms of knowledge.

Furthermore, in our view, children should be included as active citizens. As recognized in General Comment No. 26 of the [UN Committee on the Rights of the Child \(2023\)](#), the eagerness of children to draw attention to environmental crises is a highly valuable and influential factor in bringing about legislative and legal change.

In their own way, children and adolescents have long claimed to be active agents in this civic debate. Increasingly, children are not only demanding to be heard but also creating spaces for meetings, making demands, and proposing solutions to socio-environmental conflicts. This, in our view, directly involves environmental education in opportunities and responsibilities to learn through coexistence, reciprocity, and care ([Muradian and Pascual, 2018](#)). In this process of learning with others, we have grown used to hearing children's voices in climate dissidence and activism, but apart from this, their values and opinions should also be articulated and taken into account in decision-making ([O'Brien et al., 2018](#)), as a fundamental step toward strengthening an environmental democracy ([Manzini and Bigues, 2000](#)) that will allow new forms of citizenship to emerge. In other words, a citizenship focused on engaging in action for the care and improvement of the environment; on the exercise of responsibilities toward its natural and social surroundings; and on the commitment to collective rights in real processes of transformation ([Limón-Domínguez et al., 2019](#)).

Until recently, the concept of environmental citizenship had not been explored in depth, much less in the Latin-American context ([González-Gaudiano, 2003](#)). However, the European Network for Global Citizenship proposes a definition with which we align ourselves, stressing problem-solving and the development of a healthy, sustainable relationship with nature:

Environmental citizenship is defined as the pro-environmental responsible behavior of citizens acting and participating in society as agents of change in the private and public sphere and at local, national and global scales through individual and collective actions in the direction of solving contemporary socio-environmental problems, preventing the creation of new socio-environmental problems, pursuing sustainability and developing healthy relationships with nature ([Hadjichambis and Reis, 2020](#), p. 8).

This definition enables us to include children and adolescents in these new forms of citizenship, recognizing their specificity. Despite experiencing citizenship through different frameworks than adults ([Grindheim, 2017](#)), children actively contribute to eco-social transformation. Children's actions in the area of eco-citizenship generally tend to occur on a local scale, although through them, children help address global issues ([Heggen et al., 2019](#)), thus highlighting that there are many global experiences in which, through their climate activism, children have been seen as political agents. As an example of this capacity for global eco-citizen impact, [Sageidet and Heggen \(2021\)](#) cite the climate strikes of Greta Thunberg's Fridays for the Future movement, arguing that this movement is not only a sign that children and youth are already part of this new citizenship, but that, at the same time, they have been able to alert society as a whole to one of the most important issues facing us. Childhood

eco-citizenship, therefore, is a reality experienced by those children and youth who are able to direct the attention of adult citizens toward major eco-social issues, thus contributing to education in and practice of eco-citizenship on the scale of the entire society ([Heggen et al., 2019](#)).

In the light of the above, we as educators and environmental educators should ask ourselves how we can position ourselves in the practice of environmental education to encourage this type of participation on the basis of empowering paradigms. This is a complex, unavoidable challenge, since, as [Amat \(2021\)](#) points out, environmental education initially sought to enable people to act individually in order to transform the society in which we live and, in so doing, to change social structures. As stated in the Tbilisi Declaration in 1977, we need environmental education to be oriented toward action ([Amat, 2021](#)), and to this end this we see it as necessary to give children real participatory experiences in which they may experiment with and, as [Hodson \(2010\)](#) writes, go beyond critical knowledge to attain participation and encourage this among others.

With this aim in mind, it is interesting to highlight the study of children's agency in environmental engagement in [Blanchet-Cohen \(2008\)](#), who concludes that "children's ability to influence change comes from a combination of optimism about the future of the planet with their own confidence and awareness of their limitations" (p. 270). Optimism, self-confidence, and self-awareness are, therefore, three factors to cultivate in the development of their agency. Thus it is essential to recognize the meaning of children's active role in eco-citizenship. To promote this recognition and, at the same time, the transition toward more respectful ways of living with the environment, it is necessary to encourage and support children's curiosity as another highly important factor. "Recognizing, supporting and assisting the curiosity of children and youth is all about the child's right to participate as such, being eco-citizens and developing as eco-citizens" ([Heggen et al., 2019](#), p. 392).

Activism constitutes an important aspect of eco-citizenship, as it enables citizens to actively participate in problem-solving rather than limiting them to dependence on expert opinion ([Reis, 2021](#)). Genuinely participatory settings in which children and young people engage in initiatives to develop individual and collective well-being are, according to [Reis \(2021\)](#), those where inclusion is manifested in structural change. The system changes to embrace children's values and ways of participating, rather than coopting them into predefined adult structures and modes of being. Spaces and initiatives with these characteristics enable children to develop their feeling of agency in eco-citizenship.

It is worth noting that such settings already exist; therefore, now it is time to defend and expand them. Also, it is in these contexts that children participate actively. Child and youth participation should be understood as encompassing multiple dimensions: not only democratic values, formative content, methodology, educational experience, principles driving development, and the exercise of politics, but also emotion and passion ([Novella Cámara, 2008](#)). Participation is thus conceived as both *doing* and *being*, whether individually or collectively, thereby encouraging tolerance, socio-political development, the building of citizenship, and the active exercise of the latter through deliberation and committed action on issues that children and youth experience as their own.

In learning and developing forms of participation with these characteristics, environmental education has much to offer. However,

we agree that there is a need for trained professionals to support and guide children and adolescents and to act as facilitators of their participation. Although we do not go into detail here on the main principles encouraging child participation (Novella Cámara et al., 2022), we argue that the educational settings of environmental education represent particularly advantageous opportunities in which children's participation has already advanced considerably compared to other educational areas.

Environmental education, in the context of this study (i.e., Catalonia), is carried out in formal, informal, and non-formal settings. Although in Spain it first appeared in the educational sphere, mainly through teachers (Novo Villaverde, 1996), in Catalonia its initial impulse came from the social movements and agents not linked to formal education (SCEA, 2014), further emphasizing informal leadership. In both cases, it has always been clear that environmental education should not work in isolation from other fields of knowledge, but as a cross-cutting theme. This transdisciplinary quality, combined with the flexibility and methodological openness characterizing many of its practices, affords fruitful opportunities for child and youth participation, especially in the context of projects with a community-based, transformative approach.

However, the professional reality of educational action is highly diverse and heterogeneous. In formal contexts, there is still a significant lack of the pedagogical knowledge and tools necessary for comprehensive teacher education that would include an environmental and participatory approach with children (Martínez-Iñiguez et al., 2021). Although environmental education activities can be carried out in many settings, not all those organizing them can be considered environmental educators. As Cervera Buisán (2021), p. 21 points out: "There is no clear definition of the professional profile of environmental education. The professional practice of environmental education produces different profiles and very diverse professions." In other words, although environmental education is a series of educational practices in different settings (formal, non-formal, and informal), it is important not to assume automatically that those practicing it have an established professional identity as environmental educators. This identity requires a base of competences, knowledge, attitudes, and skills specific to the field (Soto Fernández, 2007), in which, in our view, participatory and empowering guidance and support for children and youth is a key competence. Thus, we need to articulate theoretical and practical knowledge that, combined with reflective practice, empowering beliefs, and forms of accompaniment oriented toward encouraging participation, will favor and strengthen children's active participation in the practice of environmental education, allowing it to expand both within and beyond formal educational contexts.

Consequently, since defining environmental educators in terms of their profession is a complex task, we can instead define them in terms of competencies. According to Attewell (2009), a competency is not just knowledge or know-how; it conveys the idea of being able to respond to complex situations in specific contexts by mobilizing psychological and social resources, skills, and attitudes. Hence the question we ask here is: What set of professional competencies is necessary for an environmental educator working from a critical perspective, oriented toward child participation and socio-ecological transformation? The answers are multiple, diverse, and non-exclusive. We consider relevant those frameworks that focus on analytical, critical, and common action; problem-solving; and skills for

transformative participation (Bianchi et al., 2022; Cebrián and Junyent, 2014; Council of Europe, 2016; European Commission: Joint Research Centre, 2022) as it is essential to foster these capacities among all citizens, through educational guidance and support consistent with sustainable development. Are we, then, as environmental educators, equipped with training that enables us to put these paradigms into practice? And what barriers do we encounter in attempting to do so?

This article, then, sets out to address these questions. Often, teacher training in environmental education has been focused on consciousness-raising, on imparting knowledge about the environment, and on fostering a respectful attitude toward nature. But if we accept that environmental education is, above all, a critical social practice oriented toward participation and citizenship-building, then it is worth rethinking what place these factors have in teacher education and, above all, identifying the training needs teachers have and what barriers they encounter when attempting to steer their practice toward participation and action. Are we training environmental educators to face eco-social challenges with a pedagogical approach capable of ensuring that children and adolescents can participate meaningfully? What should we take into account in designing forms of teacher education that will be consistent with the aims and complexity of the discipline and place children's participation at their core?

The exploration of the barriers and training needs that environmental educators encounter in educating *through* and *for* action is what has guided the interest of this study, in line with what we see as the main focus of research in a form of environmental education oriented toward critical and transformative action (Calixto Flores, 2012; Caride, 2008). Thus, we have endeavored to identify the impediments in the field and educators' training needs in their attempts to embrace and develop active children's political and civil agency in environmental education.

2 Materials and methods

2.1 Methodological approach and research principles

This article explores the training needs of environmental educators for supporting and guiding children and adolescents and fostering their participation and decision-making in environmental education contexts.

To this end, a methodological approach was chosen that would be sensitive not only to children's experiences and narratives as "receivers" of support, but also to the reflective practice, dialog, and self-observation of educators as key participants, both individually and collectively. It aimed to be a study that, through thought and action, encounters with others, and experiential dialog, could embrace new ways of building knowledge, recognizing the diversity of existing knowledge and the complexity and plurality of lived experiences that research into accompaniment in environmental education calls for. Thus we advocate a type of research that seeks to transform not only the collective but also itself; i.e., transformation of both participants and researchers themselves, in order to enrich the practice of environmental education.

This approach was consistent with the criteria of the pragmatic paradigm (Arias, 2023; Creswell, 2009; Johnson et al., 2007; Morgan, 2007), in that it assumed a mixed social reality, accepted both objective and subjective views with the aim of being useful for solving problems, and deployed a range of different, complementary methodologies enabling us to compare and contrast our own stories with those of children and adolescents.

For these reasons, this study used participatory methodologies as a way of producing knowledge for planning and change, basing itself on and highlighting the value of people's own knowledge (Chambers, 1997). This, then, is a way of doing research that is positioned and committed to social change. There are many different types of institutions that recognize participation as a principle that is useful and valuable both for assessing needs (Ramírez-García and Camacho-Bercherlt, 2019) and for responding to those needs. Moreover, participatory methods provide research with the opportunity to open up to new perspectives and understandings in order to democratize knowledge.

The participatory approach adopted enabled us to take advantage of its inherent flexibility to gain closeness and openness to participants, with the aim of setting self-observation processes in motion and thereby developing learning among the actors and institutions involved (Castro et al., 2007). The study also adhered to four key methodological principles for generating and co-constructing forms of knowledge, namely: inclusion, multivocality, reflexivity, and research sustainability. We define research sustainability as a deliberate positioning in which we commit to investigating responsibly with both resources and participants. This involves ensuring the inclusion of all voices through social justice and transparent relationships, adapting objectives and methodologies to available capacities, and safeguarding both the rigor of the process and the well-being of those involved to guarantee ethical, fair, and respectful research. These can help transform limiting representational frameworks toward children in and through environmental education, in addition to enabling the exploration of practices and experiences that recognize, value, and reinforce the practical knowledge that is currently being developed in favor of children's participation in environmental education.

Furthermore, the study conformed to the three main principles of inclusive childhood research developed by Graham et al. (2015) in the Ethical Research Involving Children (ERIC) project, i.e.: reflective practice and self-awareness in dealing with participants' experience; respect for children's rights, well-being and human dignity; and attention to the relationships between the people involved in research. Lastly, putting research sustainability into practice involves taking the human factor into account and understanding that methodological design is not only shaped by the specific approach chosen and the principles underlying it, but also by the capacities, skills, and motivations of the research team. Thus, our objectives were set and techniques selected according to the possibilities and resources available to us.

2.2 Strategy and methodological design

Of the methodological options developed hitherto for addressing our objective, and in the light of the perspectives discussed above,

participatory analysis (Castro et al., 2007; Cano-Hila et al., 2019; Cano-Hila and Sabariego-Puig, 2017; Folguez-Bertomeu and Sabariego-Puig, 2018; Ojeda Millahueque and Zúñiga González, 2020; Ramírez-García and Camacho-Bercherlt, 2019) was considered to be the most appropriate. Our understanding was that participatory analyses would enable us to determine the context of the object of study through an approach oriented toward action and social transformation (Ander-Egg, 2003; Villasante, 2010). This approach also uses participatory methodologies of data production and analysis (Castro et al., 2007), in such a way that information is organized and analyzed by the community itself (Ramírez-García and Camacho-Bercherlt, 2019), thus enabling the identification of the most pressing needs and the construction of alternatives through collaboration between different actors (Campos Castillo et al., 2020) in the process of the research itself.

On the empirical level, this method was articulated by combining three data collection techniques: semi-structured interviews, questionnaires for both children and educators, and participatory workshops. In this article, we focus on participatory workshops; however, it is important to emphasize and clarify that some of the elements brought into discussion, or employed to initiate certain debates, are derived from previous data collection techniques, namely the 7 semi-structured interviews, the 68 questionnaires administered to children, and the 64 questionnaires administered to educators.

From this point onward, a total of four participatory workshops each of approximately 2 h' duration were held. The workshops took place in July, September, and October of 2023, and their starting point was the information provided by the questionnaires that had been administered from February to July of the same year to children, adolescents, and education professionals – including primary and secondary-education teachers, non-formal educators, and environmental educators – who had identified themselves as stakeholders in environmental education.

The diversity on the stakeholders in environmental educators was also a criteria for defining the sample. The participants constitute a group of 10 professionals in the field of environmental education, among whom are environmental educators, teachers, leisure educators, municipal education officers, and environmental informants. This heterogeneity among participants strengthened multivocality and intersubjective reflexivity as factors ensuring a genuinely participatory methodology. [Supplementary Table 1](#) presents the participants and profiles that constitute the members of the participatory workshops.

This technique was valuable for its flexibility and closeness to informants, who, through negotiation and dialog, provided the keys to understanding the phenomenon under study. The workshops enabled in-depth investigation of four dimensions of information gathering, namely:

- The conceptual dimension. In this area, participants explored conceptual representations around the central themes of the study, i.e.: environmental education as a subject field and its objectives; children's participation; and socio-educational accompaniment in environmental education.
- The dimension of educational practice. Here, we inquired into current developments in environmental education, and the existing methodological opportunities offered by each different

type of knowledge or practice aimed at strengthening child and youth participation.

- The dimension of challenges and strategies. In this area, we endeavored to obtain a subject-based view of both the actual situation in the field and environmental educators as professionals in their current context, in relation to their attempts to incorporate participatory elements in their work.
- The dimension of participatory support and guidance. Here, we explored in detail what aspects of accompaniment encouraged the development of more participatory and empowering educational practices with children and adolescents in the field of environmental education.

This article focuses on the process of the participatory workshops and the results yielded by them, given their usefulness in developing an awareness of the barriers and training needs which may contribute to the design of future training programs. For this reason, in this article we center on the last two dimensions identified above, due to their relevance to inquiry into and exploration of the group's challenges and needs. These two dimensions aimed to identify barriers (the challenges that both educators and the field itself face in putting child and youth participation into practice) and training needs on the basis of an educational design emerging from the participatory workshops.

To begin with, we briefly present the structure and methodological sequence of each workshop session. First, after a short phase for members to get to know each other (especially necessary in the first meetings), we went on to contextualize the meaning of the session and to present the topics to be discussed. Subsequently, an individual reflective activity was put forward, aimed at enabling participants to critically examine their own practice in relation to the issues raised. This initial reflection was followed by a sharing session, in some cases in small groups. This encouraged the exchange of views, group dialog, and the co-construction of knowledge. In some cases, after this extended discussion phase, the work was resumed in individual or small group format in order to further explore some emerging ideas, subsequently coming back to the plenary to report findings. This to-and-fro movement from personal reflection to group exchange was a distinctive feature of the process, enriching the experience and enabling the workshops to become genuine opportunities for education and self-education.

Two other aspects of the workshops should also be highlighted. First, apart from reflection, they focused on consensus, decision-making, and establishing priorities. In some sessions we also worked to develop common, agreed frames of reference. Secondly, as in our research with children and adolescents, we did not limit ourselves exclusively to spoken discussion but also used graphic means such as drawing, writing, and other visual media to facilitate the expression and visualization of complex ideas, and to record group progress and agreements reached.

As an illustrative example of the process described in the methodological framework, a session might begin—once its objectives have been clarified—by inviting participants to represent themselves graphically while considering the following questions: “What skills, knowledge, attitudes, and resources do I possess to perform effectively as an environmental educator? Which do I lack or see as necessary to develop further?” Collective discussion of the resulting drawings and

responses would then allow for the identification of both commonalities and differences among participants. Shared or particularly relevant elements, as prioritized by the group, could subsequently guide the formation of three or four teams for more in-depth exploration. The session would again conclude with a plenary exchange, providing a foundation for continuity in subsequent workshops.

In other instances, as suggested by their designation, the participatory workshops employed a variety of participatory techniques in accordance with their objectives, whether oriented toward analysis, proposal development, decision-making, or other aims. In this manner, multiple dialogs unfolded through shared, in-person interaction around the topics at hand, thereby reinforcing processes of knowledge co-construction.

2.3 Process of analysis

The participatory workshops yielded further data from the discussions and the views expressed by participants. This qualitative information was analyzed through a content analysis to give it greater depth and make its interpretation more visible. Qualitative content analysis seeks to describe, classify, and interpret textual data, looking for patterns and relationships by grouping content thematically into categories of analysis, through activities such as segmenting the text into quotes, coding, and writing comments (Gibbs, 2012). Once the content of the workshops had been transcribed literally, we proceeded to the qualitative analysis, divided into three phases:

- 1 Coding phase. The transcripts were read to elaborate the first coding of the text and to group codes into categories. This process began by defining dimensions and indicators deductively derived from theoretical concepts and previously published works (Caride and Meira, 2001; Crespo i Torres, 2022; Reis, 2021; Trilla Bernet and Novella Cámara, 2011).
- 2 Category triangulation phase. From the emerging data and through an inductive process, the initial categories and subcategories were examined, bearing in mind the theoretical frame of reference and the guiding dimensions of the methodological design. As a result, a system of categories was established to code all the units of analysis of the workshop content, as shown in [Supplementary Table 2](#).

For the purposes of this article, we focused on exploring three analytical categories:

- C1. Challenges. We set out to determine the challenges that environmental education professionals faced in attempting to open their work up to child and adolescent participation. We addressed both subject-based and structural challenges in addition to those associated with the environmental educator her/himself.
- C2. Training needs. In line with clear evidence emerging from the workshops of the need for further training focused on the paradigms that we advocate in this study, we explored environmental educators' specific training needs. To this end,

we inquired into the needs to be addressed and the objectives and contents that such training should have.

- C3. Workshop evaluation. The methodology used in this study was eminently participative and reflective, and it was assumed that it brought into play educational and self-educational factors that were of special interest, given the needs of the group with which we were working. In this category we explored participants' assessment of the workshops in terms of their professional development.

3 Results collection and verification phase. A content analysis was carried out to enrich the data sequentially. For each category, the information obtained in the four workshops was analyzed on two levels: (a) on a general level, to obtain an overall view of all the categories identified; and (b) according to the specific features of each workshop, to obtain a more nuanced understanding in line with its particular characteristics.

2.4 Research ethics

The aim of research ethics is to protect the rights of participants and ensure respectful treatment. This study formed part of a larger project approved by the bioethics committee of the University of Barcelona. Also, the ethical issues involved were reaffirmed in accordance with the following regulatory and reference frameworks: the Code of Good Practice in Research approved by the University of Barcelona (Universitat de Barcelona, 2020); the Organic Law on the Protection of Personal Data (LOPD) 15/1999, December 13th; Royal Decree 1720/2007, December 21st, on the Development of the LOPD; European Directive 2002/58/EC, which emphasizes the confidential treatment of data and prevents them being disseminated or sold to third parties. Thus we would underscore that we adhered at all times to the criteria of quality and rigor presented above. This involves no alteration or fabrication of data or plagiarism of ideas. Transparency was also sought throughout in order to ensure that all participants were duly informed of their participation and all its potential implications. Direct, horizontal communication was ensured with all participants. Furthermore, at all times, responsible, exclusive use of the data obtained was ensured in the preparation of informed consent and in guaranteeing a duly-informed, voluntary researcher-participant relationship of mutual recognition. In addition to these guidelines, the study adhered to the principles of responsible research and innovation (RRI; Owen et al., 2013). Thus, it aimed to encourage research and innovation practices oriented toward achieving sustainable, ethically acceptable, and socially desirable outcomes.

3 Results

The results are presented below in sections corresponding to the three analytical categories discussed above (challenges, training needs, workshop evaluation).

3.1 Challenges

As the study developed, we were able to investigate the challenges faced by participants, not only in carrying out their activities in the best way, but also in attempting to embrace child and youth participation as a core element. Within this exploration of challenges, two main areas were identified: first, challenges the educators encountered in their daily work; and second, challenges of a structural or subject-related nature that had to be overcome at the same time as the others in order to strengthen child and youth participation.

3.1.1 Environmental educators' challenges

- *Creating links with the environment and recognizing its possibilities.* Many children and adolescents have very sporadic contact with nature, which translates into a lack of knowledge of the basic features of ecosystems. The challenge here is to bring the natural environment closer, especially in urbanized contexts. Children and youth must know about the environment in order to appreciate and defend it. The environmental educators saw their task as bringing this context closer to students from the standpoint of its pedagogical and transformative potential, and in terms of addressing current problems.

There are a lot of people who might live closer to forests or the country or systems where they have this contact, but it's true that most of the population lives in cities. That means they're a bit disconnected from environmental education. For me the great challenge is how to get across, first, the basic knowledge. A lot of people are surprised when you explain something really simple, and starting from that, maybe they take more care to put bird feeders in their garden and things like that. (P10)

- *Developing the critical political capacity to address conflicts.* Despite the consensus on the climate emergency, it is necessary to develop a critical political and social capacity in order to rethink the current model of society and consumption. This conflict is present at the macro level as well as in everyday social organizations. Biophysical resources are limited and the socioeconomic model will have to be transformed. Thus it was seen as vital not to avoid conflict, but to address it through dialog and empathy.

Conflict must exist, because it will exist. When someone has to lose their privileges, they'll always hold on and try not to lose them, and then that'll cause conflict. And you have to be prepared to welcome it and work from that conflict and build from there. (P6)

- *Training for and through action.* A lack of specific professional training was identified. Participants valued self-taught potential, but they also saw it as necessary to have formal training enabling them to encourage transformative action arising from critical thinking in the face of a system that is often hostile. Therefore

they were of the view that environmental education should serve to transform from within, although may be partial or insufficient.

Yes, perhaps another challenge would also be for this knowledge to help people to have more influence on politics and community actions, on the dynamics, on the social structure. That is, for this knowledge and this awareness to have enough weight to mobilize people to demand structural changes or changes on the political and business level, which in the end is what shifts all the gears a bit on the global level. (P10)

3.1.2 Structural and subject-related challenges

In addition to the challenges involved in direct educational practice, structural challenges affecting the recognition, stability, and effectiveness of environmental education were identified. These were grouped into three areas:

- *Defining the competency framework and forging alliances between different pedagogies and existing spaces.* Environmental education was seen as a cross-curricular discipline, which ideally in the future would be integrated into all education. To move forward, it was considered necessary to define a clear competency framework that would enable cooperation with other critical subject fields oriented toward social transformation.

Environmental education also has a problem of competition with other types of education. I think the key thing here would be to say: what kind of change do we want in the world? Then if that change is coherent enough, critical enough, all other forms of education are involved. Then you can do feminist education, environmental education, etc. If you understand that capitalism, patriarchy, and colonialism are all, as Boaventura de Sousa Santos and all those people say, they're all so interwoven with each other that to break with one you have to break with the others. (P5)

Further, it was seen as necessary to take this process of defining competencies and (hopefully) methods a step forward in order to stabilize it and integrate it into the formal sphere. For this to happen, it was important to define competencies beforehand, so that they could have a cross-cutting presence in all subjects, and to avoid the excessive crystallization or compartmentalization of the field.

A small contradiction is the fact that in the history of environmental education, sometimes it seems that the only option for it to be taken a bit more seriously – and therefore for teachers to really embrace it – is by making it stable, obligatory, with a professional specialist, etc. But of course, the most socially dynamic processes are not exactly the most stable ones. [...] I think it's a necessity that should be imposed one day. That there should be specialists in environmental education in schools to make things happen, right? (P5)

- *To value and dignify existing spaces and promote professional stability and continuity.* Participants noted educational

experiences of great transformative value, but which were often marked by occupational instability and precarity, thus limiting any sustained impact they might have.

So it's good to be able to get behind it, but I think it's a big challenge. If we want to have these initiatives, we have them. But they're precarious. So let's have them without them being so precarious, for example. (P3)

The environmental educators reported that their working conditions hindered the professionalization and continuity of their projects.

The people who do environmental education are people who're trained in general, they have a degree and a lot of knowledge on the subject, and often they're taken on only as monitors [...] Yes, I'm teaching four games with content in which I've previously been trained. (P10)

People who work in environmental education find it very difficult to make a living from it. If you know people who are educators, I mean, I'm doing coordination because doing education and being only an educator I cannot survive. (P5)

- *To discover what works and change what does not.* Participants valued positively what worked within the current system, especially that which was counter-hegemonic and promoted care, sustainability, and food sovereignty.

[...] we have to discover what things are already working within the system, that are actually anti-systemic. Which are the ones that help us survive safely, right? Well, women's work, to put it briefly, right? Care work, right? Well, care work has to be promoted and valued. The same as agricultural work. [...] And it's true that this is also happening a bit, that is, mixed up with everything, you see that among young people agriculture is getting a bit more good press. (P5)

At the same time, the importance of opening arenas for new discourses and redefining what a good or desirable life means, whether inside or outside the educational system, was highlighted. In changing what does not work, participants stressed the importance of the state having the courage to make mistakes, or at least to try new communicative strategies.

And leaving behind the paternalism of a young woman saying, "Yes, it's very important to recycle, did you know this and that?" The most important challenge is to leave behind these lectures that people reject. That's a challenge for me. To get someone to get behind this and for the Environment Department to lose the fear of paying for a product that doesn't say exactly what they want to say. (P2)

Lastly, the workshops raised the issue of bureaucracy, and how it limits many of the ideas of educators who want to try new things,

either due to the very nature of these ideas, which seek to connect with actors not normally involved in formal education, or because of their own lack of knowledge of the bureaucracy. For example, one participant stated that “Eliminating it would help, and if you cannot eliminate it, it would help to know about it” (P5).

The environmental educators agreed on three main strategic lines for responding to the challenges identified in the field. First, they highlighted the importance of *establishing a dialog with other forms of education and favoring open relationships and exchanges with the environment and local society*. This involved cooperation in areas such as educational leisure, neighborhood gardens, and community initiatives, while at the same time opening up to knowledge and methodologies coming from diverse contexts. They saw this strategy as making it possible to break away from rigid contents and to build education based on the real experiences of children and young people.

Secondly, the *cross-curricular integration of environmental education into the formal education system* was advocated, thus ensuring that it would permeate all subjects and aspects of school life. This would include schools employing environmental specialists and having them work on transformative community projects.

Finally, emphasis was placed on *training teachers and environmental educators to offer an education that would be critical, relevant to students’ everyday lives, and connected to global and local challenges*. Participants thought that such training should include competencies for boosting participation, critical thinking, and transformative action from the early stages of education. Also, it was within the framework of this last strategy that the workshops developed, via group identification of training needs.

3.2 Training needs

Training needs were analyzed on the basis of three key questions discussed on in the participatory workshops, namely: What do we lack in order to practice within a participatory, empowering paradigm among children and youth? How can we respond to these needs? What subject-matter is the most important for training environmental educators to build child and adolescent participation?

First, two main areas for improvement were identified: strengthening collaboration with other educational and community agents, and promoting more participatory practices through familiarization with active methodologies and the creation of opportunities for participation. In addition, the need to help educators understand participation from the theoretical and methodological point of view, to ensure the inclusion of all students, and to promote critical thinking was highlighted. On the other hand, priority was not given to developing environmental literacy, but rather to reinforcing the educational and participatory dimension of teaching. Lastly, in the area of priority subject-matter, a wide range of proposals emerged aimed at boosting child and adolescent participation in educational practice. Cross-cutting elements of environmental education, such as *observation of detail* and *care for nature*, were stressed, in addition to cross-curricular educational themes such as *managing emotions*, *gamification*, and *the use of games*. Lastly, a large number of elements linked to participation, in terms of fostering and managing it both groups and the environment, were also mentioned.

Although the answers to these questions are interesting in themselves, the following section shows how they had matured as a result of the content analysis of the workshop members’ initial dialog and debate around the questions presented above. Four major needs were identified for environmental educator training based on participatory, empowering paradigms involving children and youth:

- To make participation in environmental education explicit in order to include people; to develop the concept of participation and learn to assess its value. This first need responded to the purpose of creating a paradigm shared among different educators, in order to both define and question what participation is. It was argued that it is not a concept that an environmental educator often stops to think about, and that when a valuable participatory practice emerged, it tended to happen randomly because it came spontaneously from a particular person.

What this means is that we don’t think about it much. I have a hard time thinking about it. It’s because it comes naturally and you think you’re already doing it, but you don’t stop to think about it either. Or I don’t anyway. (P6)

It was argued that this need should be addressed using methodologies favoring analysis and construction based on trainees’ shared experience, and that to develop this methodology it was necessary to establish the concept of participation and to learn to assess its value.

For this you need a concept of participation and to learn to decide the value of participation. For example, how do we value participation? Should we value it in the impact that others produce? Should we value it in what kids develop? Or if they choose things? All these questions around participation [...], maybe you focus on one and forget about the others. Well, take one person and their experience, and with that help them stretch starting from their own work, and then with you and then with you and then with me... (P5)

- *Training in methodologies in which the educator becomes a helper and guide*. Although this study constantly focused on taking participants’ concerns and working on them through the pedagogy of the question, this point highlighted the need to work on the basis of learning situations as a useful way of escaping from the comfort zone in which participation in environmental education sometimes gets bogged down. It also stressed the usefulness of service-learning projects and the need to be trained in this methodology, as it favors accompaniment and is linked to the local environment.

One way to participate a lot and really important for me is service-learning methodology. Because then it’s not just intervening with you and me, but on a community level [.]. Their education has a positive impact on society [...], and that also creates expectations that interest them, and that’s why they want to participate. (P3)

- To connect all educational actors, get to know the local environment, and connect it with the practice of environmental education. This need emerged from all the contributions that linked participation to the community and the community to environmental education. Reaching beyond training in networking techniques and dynamics, it was argued that the training process itself could and should become a means of forging this connection and ensuring that it was consolidated.

And it should be consolidated in some way, with a follow-up to keep the actors that have been incorporated on board. Sometimes you do a training course, but then you do not get the summary [...] Maybe that's something that's also missing. (P7).

Along with this need to create links with the local area, the need to learn about services and resources already existing in the community or immediate area was expressed. This was seen as fostering a sense of belonging and being able to act in environments in which a result could be made visible. It was also considered important for knowing what opportunities for transformation the local area offered.

The opportunities in the local area that allow you to transform the area if you don't know it and don't see the dynamics in your surroundings and how people have gone out to do things.... [...] This is what allows you to engage yourself and say: I can also transform the local area in some way (P5).

Participants also mentioned the need to look for resources and information relating to children and adolescents' socio-environmental and cultural contexts in order to be able to offer these resources and contacts to others.

The thing is that this happens a lot with teachers, who arrive and don't know their local area, because perhaps they're not from the municipality, and here the environmental educators are more rooted and play this role [...] It's having the ability to go to the area and know it well, to know what opportunities it offers and to offer them. (P5).

- *To provide tools for including all children and youth in participating in educational action.* This need was one of those most remarked on throughout the sessions. It can be broken down into two more concrete ones. First, participants noted the need to equip environmental educators to identify specific, especially important situations in education. Secondly, they also mentioned the need to provide resources and tools for managing diversity.

On this point, it was remarked that, although environmental educators often provide activities and projects for students with reduced mobility, it was very common that, especially in activities such as day trips, their needs were not taken into account in terms of including them in the activity, and as a result they were referred to carers:

But sometimes, as they're difficulties of other types, or that go unnoticed. They tell you, "Well yes, we have a couple of students,

but there's a carer or whatever", as if to say that's it, and we can do what we always do and we'll adapt it, right? And as we don't always focus on it properly... No [...], inclusion for us isn't always a hundred percent (P6).

Inclusion and diversity were also discussed in cultural and linguistic terms. In this case, the vegetable garden was advocated as having very high potential for including newly arrived students, since it was a place where practical activities are undertaken and, therefore, the factor of peer imitation was prominent. Thus it was seen as necessary to promote this activity and to have training to take full advantage of it. In the same way, participants highlighted certain educational activities where environmental education actions took place as enabling students to engage with the activity in different ways, either because of its rhythms or because of the break with the linearity of the classrooms.

Well, maybe it's also what it says here, that participation, I mean it's inclusive, right? I mean that one thing is linked to the other. If you know how to do the methodology properly, right? Because OK, we're looking at a vegetable garden activity [...] where participation could be inclusive because it starts from some tasks with which everyone can feel comfortable, so maybe a kid can sit down there and they can do it in some way, right? If the language is a problem, or if they're more restless then they can get into digging. (P10)

Lastly, the need to know how to identify different special educational needs and work with them was stressed. In both subject-matter and methodologies the importance of inclusion was highlighted for affirming that a particular project or action was participatory. The educators were also of the view that inclusion for all could become a means of encouraging new forms of group participation.

3.3 Assessing the workshops

As with any participatory process, the workshops, apart being a method of gathering information, were valued as an arena for discussion among professionals that was co-constructed with them. In order to assess their usefulness, a set of questions was drawn up. One of the questions asked, and the one we analyze in this article, focused on what, if anything, the study had offered to participants. The question was: *Do you think these workshops have provided you with something? What did they provide you with? If not, what did you miss?* Among the responses, four major contributions were noted:

- *Tools for boosting child participation in environmental education.* Importance was given to the participation of children and adolescents. Participants stated that the workshops had provided tools, perspectives, and analyses on how to enhance participation in environmental education.

The whole area of children and adolescents' active participation is a whole new world in which, with only two sessions, I was able to learn a lot.

Some participants emphasized precisely this practical approach, which enabled the workshops to offer tools for encouraging participation based on exchanging ideas among peers.

- *Listening and exchange among professionals.* The exchange of experiences and points of view with other educators was highly valued. Dialog and active listening enriched participants' outlook and provided a greater understanding of the sector.

It was really interesting to listen to and get to know stories from different areas of environmental education in Catalonia.

This advantage was limited in some cases by lack of time for listening, questioning, and reflection. Some informants suggested that this reflection should be continued or deepened.

- *Reflection on the role of the environmental educator.* Several participants stressed that the workshops were an opportunity to rethink their work as environmental educators, highlighting the need to make environmental education critical, participatory, and transformative.

They particularly helped me reflect on the fundamental role of the environmental educator from an active, participatory perspective with students.

- *Motivation and personal transformation.* Participants stated that the workshops had had a motivating and transforming effect. The discussions helped them to stop, rethink their own practice, and incorporate small, significant changes in their way of educating.

They gave me motivation. Stopping, thinking, and going back. Adding small changes in our role as educators.

Turning to the second part of the question, in some cases participants felt the need for more sessions or some specific writing and reflection activity. Most agreed that time was lacking, and they justified this by referring to the value of the workshops themselves. Although each workshop had lasted 2 hrs, they explained that it was not usual to have this type of opportunity for meeting among professionals in the sector and, having experienced it, they saw it as valuable and would have found it useful to have more time to deepen or expand the contributions discussed above.

4 Discussion

The challenges faced by environmental education (EE) and strategies for dealing with them were articulated around a number of basic needs identified in the research results. One of the major challenges determined was that of clearly defining a competency framework for the field. This is not an issue exclusive to EE. [Ribeiro and Menezes \(2022\)](#) note in their work that education for citizenship is often neglected and not considered as relevant as other curricular areas in schools. It was seen as essential to establish this framework in order to forge alliances between different pedagogies and educational areas, thus strengthening the capacity of environmental education to act effectively and coherently ([Amat, 2021](#)).

In the same area, a strong concern emerged among participants over the lack of professional stability and insufficient professionalization of environmental educators, an element also highlighted by [Cervera Buisán \(2021\)](#) in her diagnostic report on the profession. They saw this precarity as seriously hindering the consolidation of quality, sustainable practices in the field, thereby putting the continuity of valuable existing projects at risk as pointed out by [Soto Fernández \(2007\)](#). [Amat \(2021\)](#) indicated that this is a structural problem that directly affects educators' ability to support and guide transformative educational processes. Despite this instability, know-how derived from experience, trial and error, and situated learning was valued. This practical dimension was said to enable educators to feel comfortable with relevant subject-matter and methodologies, allowing them to improvise, adapt to the context, and forge links with the environment. However, these skills were blunted when working conditions prevented full-time, sustained dedication to EE.

From a broader perspective, our findings indicate a need to return to the transformative origins of EE as expressed in the [United Nations Environment Programme \(1975\)](#) and the Tbilisi Conference. According to [Amat \(2021\)](#), environmental education's original purpose was to change both relationships between human beings and the environment and relationships among themselves, which, therefore, implies a will toward social and structural transformation ([Amat, 2021](#), p. 126–127). In accordance with this transformative dimension, participants emphasized the role of environmental education as a transdisciplinary arena ([Meira, 2009](#)) where dialog with other ways of educating and with differing situations is essential to advancing toward a refoundation of the field ([Bonil et al., 2010](#); [Caride and Meira, 2001](#)). Establishing cooperation with other sectors was seen as facilitating the recognition of outside elements that could add to and enhance environmental practice.

The study also confirmed the existence of a significant gap between the founding principles of environmental education and the actual current conditions of its practice. [Bonilla-Mendoza and Garzón-Barragán \(2022\)](#) argue that environmental teaching practices, especially regarding the development of pro-environmental and eco-citizenship skills, are shaped by the institutional context and teacher training. In this study, we have observed that, with respect to training, it is necessary to strengthen critical paradigms that empower educators to move beyond objective knowledge ([Tapia González, 2023](#)). Although we may see it as a tool for active participation and eco-social transformation, many of the experiences reported by the educators described a fragmentary, precarious, and sometimes depoliticized praxis. This disparity can be understood as a symptom of the neutralization of educators' critical potential by their adaptation to institutional structures that prioritize conveying information over questioning and action ([Sauvé, 2005](#); [Bonil et al., 2010](#)).

In this area, analysis of the workshop results revealed at least three structural problem areas:

- Insufficient professional training, misaligned with the pedagogical principles of critical, transformative, participatory environmental education;
- A lack of institutional recognition and legitimization of the role of the environmental educator, which translates into job insecurity, fragmentation of the subject, and the non-continuity of projects;

- The scarce integration of children's participation in environmental education courses and projects, due to methodological deficiencies and cultural, symbolic, and institutional barriers.

From this perspective, it can be argued that the dominant paradigm in the professional training of environmental education continues to operate in terms of technical-instrumental rationality, which prioritizes efficiency, planning, and conveying information, while marginalizing ethical, political, and reflective education. Alternatively, when the latter is included, it is imparted through specific slogans that do little to question the root of the problems supposedly addressed. This approach hinders not only the real inclusion of children and youth as social actors, but also the possibility of creating educational communities capable of imagining other possible worlds based on eco-social justice.

Furthermore, our findings indicate that many professional learning processes in the field are based on practical experience – situated learning, trial and error, community relationships – rather than on formal or institutionalized training. This situation involves a clear imbalance: on the one hand, educators' autonomy and adaptive capacity is valued; on the other, there is a lack of stable training frameworks ensuring a minimum common base of critical competencies, particularly in relation to child participation.

Regarding the *specific challenges faced by environmental educators*, the difficulty of forging links between children and the environment was highlighted. Participants stressed the need to train educators to identify the opportunities offered by the environment and its issues, and to work together with children and adolescents from a participatory perspective. In addition, the challenge of developing a critical political capacity for addressing socio-environmental conflicts through in-depth analysis rather than symbolic action was recognized (Amat, 2021). Another important challenge was training for transformative action, which would involve offering tools to the community and to children in order to build educational action based on the will toward collective transformation.

Our findings coincided on this point with Amat (2021), who advocates reflective practice in order to bring to light social structures that usually remain hidden. In fact, we concur with many authors who advocate for an educational practice that makes explicit the injustices and asymmetries associated with Eurocentric and androcentric worldviews (Carmona et al., 2022; Herrero, 2022; Limón-Domínguez and Alcántara-Rubio, 2019; Rivera Cusicanqui, 2020; Shiva, 2008; Tapia González, 2023; Walsh, 2022; Walsh and Rodrigues, 2021) that overshadow popular, relational, and community knowledge, much of it embodied in children themselves. In this context, recognizing the political role of children as bearers of knowledge, demands, and alternatives, becomes a pedagogical and ethical imperative. As indicated in General Comment No. 26 of the UN Committee on the Rights of the Child (2023), child participation in climate action is not only legitimate, but essential if we are to produce fair, sustainable responses to the crisis.

In this framework, participation can no longer be conceived as a technique or as an end in itself, but instead as a dialogic, relational praxis, linked to the development of agency, mutual recognition, and collective transformation (Heggen et al., 2019), without leaving aside its political and emotional dimensions (Novella Cámara, 2008). This requires a profound epistemological shift in the training of environmental educators: from knowing how to do things to knowing

how to help and guide, from knowing how to convey information to knowing how to listen, from knowing how to act to knowing how to transform collectively. Thus, in line with International Commission on the Futures of Education (2021) urgent call for a new social contract for education, the need to embrace children as active citizens in the search for collective solutions is affirmed, recognizing their capacity to contribute knowledge, ideas, and innovations in building peaceful, sustainable futures. This vision reinforces the idea that it is only through children and adolescents' critical and transformative action (Calixto Flores, 2012; Caride, 2008) that we can move toward inclusive, participatory, empowering environmental education.

In response to these challenges, participants put forward a clear strategy: specific professional training for environmental educators. This need is evident in our findings and is aligned with the approach of Cebrián and Junyent (2014), who argue that environmental education requires training that addresses its complexity and equips educators to work with critical pedagogy. Likewise, studies such as those by Cervera Buisán (2021) and Franquesa (2018) show that formal training in Catalonia is scarce, dispersed, and often relegated to isolated modules in different degrees. In general, we found that environmental educators mostly came from the natural sciences, with fewer from the educational field. The conclusion, then, is that while the environmental aspect is currently to some extent accounted for, it is time to reinforce the educational aspect, reclaiming the transformative character of environmental education and broadening its scope beyond simple environmental literacy. At the same time, educational challenges persist in schools, as not only the need for teacher training, but also a firm commitment from educators becomes essential to initiate projects focused on building environmental citizenship (Monte and Reis, 2024).

Therefore, any proposals for professional training emerging from this study cannot be limited to technical formation. The need to reshape training spaces as participatory settings in which educators not only acquire content but also build knowledge based on dialog, problematization, and shared experience was highlighted. In this area, the participatory research workshops were not only a tool for gathering information, but also a transformative training approach, highly valued by participants for their own professional development. Thus these workshops can serve as an example of a valuable training experience that can guide future training programs. The experience of these workshops, as we have seen in this study, represents an initial response to the challenges and training needs identified. This format, based on active participation, the recognition of participants' experience, and the collective construction of knowledge, demonstrates the potential of training approaches that transcend the traditional lecture-style approach. Thus, here we advocate environmental educator training inspired by the participatory workshop structure and dynamics: a situated, contextualized, dialogic form of training that promotes peer exchange, critical reflection, and the creation of professional networks. Their dialogic methodology, validation of practical knowledge, and collective networking were perceived as motivating, mobilizing, and transformative. In this way, it would help decentralize the formation of hegemonic frameworks and legitimize alternative epistemologies, in which popular knowledge, children's experience, and community relationships would take center stage.

At the same time, we would like to return to this study's commitment to child and adolescent participation. The type of training proposed should enable us to rethink our own discourses and

representations, as well as the practices and methodologies we use, in order to transform them in the direction of more participatory forms. It is also essential to foster self-knowledge and critical reflection on our way of educating, so that we may work from the experience of *knowing*, *knowing how to do*, and *knowing how to be* in order to achieve a *knowing how to act* that will embody the forms of accompaniment we wish to offer. For all these reasons, and more concretely, we propose here three approaches that could articulate a form of educator training able to respond to the needs identified: (1) by broadening and questioning conceptual representations in different key themes and fields; (2) by recognizing and encouraging participatory practices, methodologies, and opportunities in educators' day-to-day work; and (3) by reflecting on their way of supporting children and children's participation.

This, of course, is one possible strategy, but not the only one. It is important to prioritize and provide resources to the various regional, municipal, and educational instances and institutions involved so that they may establish environmental educators as fully-fledged educational actors and, thus, both produce and require qualified professionals. This should also embrace child participation, and thus contribute to the development of specialized professional figures with the ability to forge links with the local area, understand the local context, and provide a critical and cross-cutting view from the biological, social, cultural, political, and economic perspectives (Moreno-Fernández and Navarro-Díaz, 2015). In schools, for example, Amat (2021) reinforces this idea by proposing that schools should open themselves up to the community, seeing the environmental educator as the appropriate figure to develop such connections. To this end, and in the light of our findings, the educator should be trained in facilitating and animating participatory forums and activities; in encompassing the viewpoint of all community actors in educational practice; and in creating and building spaces for meetings where professionals may exchange strategies and resources at the same time as individually and collectively questioning their approaches to support and guidance.

In conclusion, we would like to stress that the added value of this study lies in demonstrating that training processes themselves, when they include genuine participation, peer dialog, and contextualization in terms of professional experience, become opportunities for meaningful learning and the strengthening of networks. While it is acknowledged that the participant sample is relatively modest, and the associated limitations regarding the transferability or generalizability of findings are recognized, this study argues for the value of participatory techniques as tools for the situated co-construction of knowledge. Such approaches enable research that both acknowledges and draws upon the diverse expertise of environmental education stakeholders, shaped by their training, experience, and life histories. Moreover, the continuity established through successive workshops has allowed for a deeper process of knowledge co-construction that emerges when professionals actively engage in collaboration, dialog, and critical reflection, collectively identifying and envisioning solutions to shared challenges. Thus, participatory methodology is not only effective as an intervention or research strategy, but also as an excellent approach to training environmental educators committed to social transformation.

Lastly, it is important to emphasize that our findings should not be read as a pessimistic analysis, but as a call to strengthen existing opportunities. There are experiences, discourses, and professionals who already work with empowering, democratic, and participatory approaches. Thanks to them we can question the practice of environmental education through these enabling paradigms. The

major task is to consolidate these paradigms, provide them with legitimacy and resources, and turn them into a model for professional training that responds to present and future challenges. The commitment to children, youth, and the community in general, leads us to hope that environmental education may contribute effectively to a just eco-social transition, and be an essential spur to leaving behind training models that negate children's transformative power and the emancipatory role of the educator. Investing in forms of training consistent with these principles is not a luxury, but an essential condition for the development of environmental education as a living, political, citizenship-building practice. The answers to the eco-social crisis will emerge not only from science and technology, but also from a form of education capable of imagining, together with children, other ways of inhabiting and transforming the world.

In short, it is a question of turning the training of environmental educators into an opportunity that enables them to support and guide children and youth, not only so that they can participate in activities proposed by others, but also so that they can take action and lead their own legitimate initiatives in the face of the eco-social crisis. Building this shared path is essential to shaping the type of citizenship that we advocate from the standpoint of environmental education.

Data availability statement

The datasets presented in this study can be found in online repositories. The names of the repository/repositories and accession number(s) can be found at: <https://hdl.handle.net/2445/218103>.

Ethics statement

The studies involving humans were approved by bioethics committee of the University of Barcelona (CBUB). The studies were conducted in accordance with the local legislation and institutional requirements. Written informed consent for participation in this study was provided by the participants' legal guardians/next of kin.

Author contributions

FC: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Project administration, Visualization, Writing – original draft, Writing – review & editing. AN: Conceptualization, Supervision, Writing – original draft, Writing – review & editing. MS: Conceptualization, Funding acquisition, Methodology, Supervision, Writing – original draft, Writing – review & editing.

Funding

The author(s) declare that financial support was received for the research and/or publication of this article. The study was supported by the Spanish Ministry of Science and Innovation, the European Regional Development Fund, and the State Research Agency, through the predoctoral training grants for PhD candidates under

the State Training Subprogram (FPI2019). The publication fee was supported by grants from the University of Barcelona for open access publishing.

Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Generative AI statement

The authors declare that no Gen AI was used in the creation of this manuscript.

Any alternative text (alt text) provided alongside figures in this article has been generated by Frontiers with the support of artificial intelligence and reasonable efforts have been made to ensure accuracy,

including review by the authors wherever possible. If you identify any issues, please contact us.

Publisher's note

All claims expressed in this article are solely those of the authors and do not necessarily represent those of their affiliated organizations, or those of the publisher, the editors and the reviewers. Any product that may be evaluated in this article, or claim that may be made by its manufacturer, is not guaranteed or endorsed by the publisher.

Supplementary material

The Supplementary material for this article can be found online at: <https://www.frontiersin.org/articles/10.3389/feduc.2025.1677023/full#supplementary-material>

References

- Amat, A. (2021). *Perspectives for transformation: pedagogical challenges [session conceptual framework]*. National Congress of environmental education. From individual action to collective transformation. Virtual edition Available online at: https://www.cnea.cat/_files/ugd/35f2f9_48625c8cc6dc426ea5fcd625917b1a0.pdf.
- Ander-Egg, E. (2003). Rethinking participatory action research. Monroe, LA: Lumen Humanitas.
- Arias, F. (2023). The pragmatic paradigm as epistemological basis of mixed methods research: systematized review. *Educ. Art Commun. Acad. Res. J.* 12, 11–24. doi: 10.54753/eac.v12i2.2020
- Attewell, P. (2009). What is a competence? *Pedagog. Soc. Rev. Interuniv.* 16, 21–43. Available online at: <https://www.redalyc.org/articulo.oa?id=135012677003>
- Bianchi, G., Pisiotis, U., and Cabrera Giraldez, M. (2022). GreenComp: the European sustainability competence framework. Luxembourg: Publications Office of the European Union.
- Blanchet-Cohen, N. (2008). Taking a stance: child agency across the dimensions of early adolescents' environmental involvement. *Environ. Educ. Res.* 14, 257–272. doi: 10.1080/13504620802156496
- Bonil, J., Junyent, M., and Pujol, R. M. (2010). Education for sustainability from the perspective of complexity. *Rev. Eureka Enseñanza Divulgación Cienc.* 7, 198–215. doi: 10.25267/Rev_Eureka_ensen_divulg_cienc.2010.v7.iextra.05
- Bonilla-Mendoza, Y. N., and Garzón-Barragán, I. (2022). Some characteristics of the environmental context at Tabora school for projecting the ecocitizenship training of fifth grade students. *Tecné, Episteme y Didaxis: TED* 2022, 57–76. doi: 10.17227/ted.num51-11916
- Calixto Flores, R. (2012). Research in environmental education. *Rev. Mex. Invest. Educ.* 17, 1019–1033. Available online at: <https://www.redalyc.org/articulo.oa?id=14024273002>
- Campos Castillo, A. A., García-Gil, G., Aguilar Cordero, W. J., Vermont Ricalde, R. M., and Oliva Peña, Y. (2020). Participatory environmental assessment with youth in a municipal ecological reserve for designing non-formal environmental education. *Acta Univ.* 30:e2355. doi: 10.15174/au.2020.2355
- Cano-Hila, A. B., and Sabariego-Puig, M. (2017). "The participatory diagnosis" in Abstract book of the working groups' sessions. Post-truth and lack of reflection, a new reality of the 21st century? (Tarragona, Spain: Publicacions Universitat Rovira i Virgili), 134–135.
- Cano-Hila, A. B., Sabariego-Puig, M., and Folgueiras-Bertomeu, P. (2019). Community participation of youth in vulnerable urban contexts: contributions from a collaborative diagnosis in Barcelona's metropolitan area (Spain). *Obets* 14, 313–342. doi: 10.14198/OBETS2019.14.2.02
- Caride, J. A. (2008). *Environmental education in educational research: realities and future challenges*. National Centre for Environmental Education.
- Caride, J. A., and Meira, P. Á. (2001). *Environmental education and human development*. Ariel.
- Carmona, R., Biskupovic, C., and Tomás Ibarra, J. (2022). Local responses to a global crisis: indigenous peoples, civil society, and Transdisciplinarity to address climate change. *Antropol. Sur* 9, 81–101. doi: 10.25074/rantros.v9i17.2315
- Castro, P., Alarcón, M., Cavieres, H., Contreras, P., Inzunza, J., Marimbio, J., et al. (2007). Participatory diagnosis as a methodological tool in educational consultancy. *REICE* 5, 163–171. Available online at: <https://www.redalyc.org/articulo.oa?id=55121025024>
- Cebrián, G., and Junyent, M. (2014). Professional competences in education for sustainability: an exploratory study of future teachers' views. *Enseñanza Cienc.* 32, 29–49. doi: 10.5565/rev/ensciencias.877
- Cervera Buisán, I. (2021). *Initial diagnostic study on sector professionalization [presentation of conclusions]*. National Congress of environmental education. From individual action to collective transformation. Virtual edition. Available online at: https://b8284cd2-29ae-45d9-847a-0b9a0ef318ff.filesusr.com/ugd/35f2f9_fa5062932c6b47da9db7e3cf34db0d65.pdf.
- Chambers, R. (1997). *Whose reality counts? Putting the first last*. London: Intermediate Technology Publications.
- Council of Europe (2016). *Reference framework of competences for democratic culture (RFCDC)*. Strasbourg: Council of Europe Publishing.
- Crespo i Torres, F. (2022). Environmental education and children's participation: an opportunity for the collective construction of eco-citizenship. *Soc. Infancias* 6, 15–27. doi: 10.5209/soci.80529
- Crespo i Torres, F. (2024). *Environmental education and children's participation: Towards participatory and empowering accompaniment in environmental education*. Ph.D. thesis, University of Barcelona Available online at: <https://hdl.handle.net/2445/218103>.
- Creswell, J. W. (2009). *Research design: Qualitative, quantitative, and mixed methods approaches*. 3rd Edn. Thousand Oaks, CA: Sage Publications.
- European Commission: Joint Research Centre (2022). *GreenComp, the European sustainability competence framework*. Publications Office of the European Union. Available online at: <https://data.europa.eu/doi/10.2760/13286>
- Folgueiras-Bertomeu, P., and Sabariego-Puig, M. (2018). Participatory action research: designing a participatory diagnosis. *REIRE* 11, 16–25. doi: 10.1344/reire2018.11.119047
- Franquesa, T. (2018). *Environmental education: Thirty years of evolution, extension and diversification*. Natura, use or abuse. Institut d'Estudis Catalans.
- García Díaz, J. E., Fernández-Arroyo, J., Rodríguez-Marín, F., and Puig Gutiérrez, M. (2019). Beyond sustainability: towards environmental education that enhances community resilience in the face of degrowth/collapse. *Rev. Educ. Ambiental Sostenibilidad* 1, 1–101. doi: 10.25267/Rev_educ_ambient_sostenibilidad.2019.v1.i1.1101
- Gibbs, G. (2012). *The analysis of qualitative data in qualitative research*. Morata, Madrid.
- González-Gaudiano, E. (2003). Education for environmental citizenship. *Interciencia* 28, 611–615. Available online at: <https://www.redalyc.org/pdf/339/33908509.pdf>
- Graham, A., Powell, M., and Taylor, N. (2015). Ethical research involving children: encouraging reflexive engagement in research with children and young people. *Child. Soc.* 29, 331–343. doi: 10.1111/chso.12089
- Grindheim, L. T. (2017). Children as playing citizens. *Eur. Early Child. Educ. Res. J.* 25, 624–636. doi: 10.1080/1350293X.2017.1331076

- Gutiérrez-Bastida, J. M. (2019). Anthropocene: time for ecosocial ethics and eco-citizenship education. *Rev. Educ. Soc.* 28, 99–114. Available online at: <https://eduso.net/revista/28/el-tema/antropoceno-tiempo-para-la-etica-ecosocial-y-la-educacion-ecociudadana>
- Hadjichambis, A. C., and Reis, P. (2020). Conceptualizing environmental citizenship for 21st century education. Berlin: Springer, 1–14.
- Heggen, M., Sageidet, B., Goga, N., Torunn, L., Bergan, V., Wallem, I., et al. (2019). Children as eco-citizens? *Nordina* 15, 387–402. doi: 10.5617/nordina.6186
- Herrero, Y. (2022). Educating for the sustainability of life: An ecofeminist perspective on education. Barcelona: Octaedro.
- Hodson, D. (2010). Science education as a call to action. *Can. J. Sci. Math. Technol. Educ.* 10, 197–206. doi: 10.1080/14926156.2010.504478
- Hultman, M. (2020). The journey of the nationalist right to ecocide: the case of the Sweden democrats. *Ecol. Polit.* 59, 101–106. Available online at: https://www.ecologiapolitica.info/wp-content/uploads/2020/10/059_Hultman_2020sdfk_EN.pdf
- International Commission on the Futures of Education (2021). Reimagining our futures together: A new social contract for education. Paris, France: UNESCO.
- Johnson, R. B., Onwuegbuzie, A. J., and Turner, L. A. (2007). Towards a definition of mixed methods research. *J. Mixed Methods Res.* 1, 112–133. doi: 10.1177/155868906298224
- Limón-Domínguez, D., and Alcántara-Rubio, L. (2019). “Environmental ethics and the ethics of care: a democratic Foundation for the Sustainable Development Goals” in Eco-citizenship: Challenges of environmental education in meeting sustainable development goals. ed. D. Limón-Domínguez. 1st ed (Barcelona: OCTAEDRO S.L.), 31–52.
- Limón-Domínguez, D., Ruiz-Morales, J., and Alcántara, L. (2019). “Active education for achieving the sustainable development goals” in Eco-citizenship: Challenges of environmental education in meeting sustainable development goals. ed. D. Limón-Domínguez. 1st ed (Barcelona: OCTAEDRO S.L.), 17–30.
- Manzini, E., and Bigues, J. (2000). *Ecology and democracy: From ecological injustice to environmental democracy*. Icaria.
- Martínez-Iñiguez, J. E., Tobón, S., and Soto-Curiel, J. A. (2021). Key axes of the socio-formative educational model for university training in the transition towards sustainable social development. *Form. Univ.* 14, 53–66. doi: 10.4067/S0718-50062021000100053
- Meira, P. A. (2009). Another reading of the history of environmental education and some notes on the current crisis. *Ambientalmente Sustentable* 4, 16–43.
- Monte, T., and Reis, P. (2024). Application and evaluation of a pedagogical model of education for environmental citizenship in Portugal by primary school teachers. *Rev. Eureka Ensen. Divulg. Cienc.* 21, 150401–150418. doi: 10.25267/Rev_Eureka_ensen_divulg_cienc.2024.v21.i1.1504
- Moreno-Fernández, O., and Navarro-Díaz, M. (2015). Environmental education, citizenship and participation. *Int. J. Educ. Res. Innov.* 4, 175–186.
- Morgan, D. L. (2007). Lost paradigms and regained pragmatism: methodological implications of combining qualitative and quantitative methods. *J. Mixed Methods Res.* 1, 48–76. doi: 10.1177/2345678906292462
- Muradian, R., and Pascual, U. (2018). A typology of elementary forms of human-nature relations: a contribution to the valuation debate. *Curr. Opin. Environ. Sustain.* 35, 8–14. doi: 10.1016/j.cosust.2018.10.014
- Nieto-Ramos, M., Puig-Gutiérrez, M., and Rodríguez-Marín, F. (2025). Relationship between education for citizenship and environmental education in the early childhood education curriculum. *Rev. Fuentes* 1, 79–93. doi: 10.12795/revistafuentes.2025.25039
- Novella Cámara, A. M. (2008). Forms of child participation: the concretization of a right. *Educ. Soc.* 38, 77–93. Available online at: <https://raco.cat/index.php/EducacioSocial/article/view/165587>
- Novella Cámara, A., Sabariego Puig, M., Esteban, M., Crespo i Torres, F., and Cano-Hila, A. B. (2022). *Participatory experiences of children and adolescents at the local level: pillars that facilitate participation*. UNICEF Spain. Available online at: <https://ciudadesamigas.org/documentos/experiencias-participativas/>.
- Novo Villaverde, M. (1996). Formal and non-formal environmental education: two complementary systems. *Rev. Iberoam. Educ.* 11, 75–102. doi: 10.35362/rie1101158
- O'Brien, K., Selboe, E., and Hayward, B. M. (2018). Exploring youth activism on climate change: dutiful, disruptive, and dangerous dissent. *Ecol. Soc.* 23:342. doi: 10.5751/ES-10287-230342
- Ojeda Millahueque, P., and Zúñiga González, C. G. (2020). Participatory assessment for the preparation of a citizen education plan. *Sophia Austral* 26, 259–285. doi: 10.4067/S0719-56052020000200259
- Owen, R., Macnaghten, P., and Stilgoe, J. (2013). Responsible research and innovation: From science in society to science for society, with society. *Science and Public Policy*, 39, 751–760. doi: 10.1093/scipol/sct083
- Puleo, A. (2019). Ecofeminist keys for rebels who love the earth and animals. Mexico City: Plaza y Valdés.
- Ramírez-García, A. G., and Camacho-Bercherlt, M. (2019). Participatory diagnosis to determine environmental problems in rural communities. *Telos* 21, 86–113. doi: 10.13140/RG.2.2.13441.99684
- Reis, P. (2021). Environmental citizenship and youth activism. *Ensino Ciênc. Tecnol.* 11, 05–24. doi: 10.31512/encitec.v11i2.433
- Ribeiro, A. B., and Menezes, I. (2022). Youth participation and citizenship education: an analysis of relations in four European countries. *J. Soc. Sci. Educ.* 21:1454. doi: 10.11576/jsse-1454
- Rivera Cusicanqui, S. (2020). *Un Mundo Ch'ixi es Posible: Essay from a present in crisis*. Ciudad Autónoma de Buenos Aires: Tinta Limón. (Colección Nociones Comunes).
- Sageidet, B. M., and Heggen, M. P. (2021). “Global citizenship and the sustainable development goals” in Reduced inequalities. Encyclopedia of the UN sustainable development goals. eds. W. Leal Filho, A. M. Azul, L. Brandli, A. Lange Salvia, P. Gökçin Özyar and T. Wall (Berlin: Springer).
- Sauvé, L. (1999). Environmental education between modernity and postmodernity: in search of an integrative educational framework. *Tópicos* 1, 7–27.
- Sauvé, L. (2005). “A cartography of currents in environmental education” in Environmental education: Research and challenges. eds. M. Sato and I. Carvalho (Brazil: Artmed), 17–46.
- Sauvé, L. (2006). Environmental education and globalization: curricular and pedagogical challenges. *Rev. Iberoam. Educ.* 41, 83–101. doi: 10.35362/rie410773
- Sauvé, L. (2013). “Environmental Education and the Social ‘Spring’” *Jandiekua: Revista Mexicana de Educación Ambiental*, 1, 31–47. Available online at: <https://leka.uaslp.mx/index.php/jandiekua/issue/view/7>
- Sauvé, L. (2014). Environmental education and ecocitizenship: key dimensions of a political-pedagogical project. *Rev. Cient.* 18, 12–23. doi: 10.14483/23448350.5558
- SCEA. (2014). *The practice of environmental education: contexts*. SCEA. Available online at: <http://caminsdenatura.scea.cat/documentacio/historia-de-leducacio-ambiental/>.
- Shiva, V. (2008). *Monocultures of the mind: perspectives on biodiversity* Fineo editorial.
- Soto Fernández, S. (2007). The socio-professional context of the environmental educator and regulation of the sector. *Educ. Soc. Rev. d'Interven. Soc.* 35, 56–73. Available online at: <https://raco.cat/index.php/EducacioSocial/article/view/165556>
- Stapp, W. B. (1969). The concept of environmental education. *J. Environ. Educ.* 1, 30–31. doi: 10.1080/00139254.1969.10801479
- Tapia González, G. A. (2023). Philosophical perspectives for an ecofeminist environmental education. *Saberes Práct. Rev. Filos. Educ.* 8, 1–12. doi: 10.48162/rev.36.090
- Trilla Bernet, J., and Novella Cámara, A. M. (2011). Participation, democracy and citizenship education: children's councils. *Rev. Educ.* 356, 23–43. Available online at: <https://www.educacionfpydeportes.gob.es/revista-de-educacion/numeros-revista-educacion/numeros-antiores/2011/re2011/re2011-02.html>
- UN Committee on the Rights of the Child. (2023). *General comment no. 26 (2023): children's rights and the environment, with a special focus on climate change*. Committee on the rights of the child (CRC), CRC/C/GC/26.
- United Nations Environment Programme. (1975). *The Belgrade charter: a global framework for environmental education*. Available online at: https://unesdoc.unesco.org/ark:/48223/pf0000017772_spa
- Universitat de Barcelona. (2020). “Research Integrity Code of the University of Barcelona”. Edicions de la Universitat de Barcelona. Available online at: <http://hdl.handle.net/2445/166917>
- Villasante, T. (2010). *Histories and approaches to a participatory methodological articulation*. CIMAS Cuadernos. Available online at: https://www.redcimas.org/wordpress/wp-content/uploads/2012/08/m_TVillasante_HISTORIAS.pdf
- Walsh, C. (2022). *Rising up, living on: Re-existences, sowings, and decolonial cracks*. Durham, NC: Duke University Press.
- Walsh, C., and Rodrigues, J. F. (2021). Other knowledges, other critiques: reflections on the politics and practices of philosophy and decoloniality in the ‘other’ America. *Revista X* 16, 54–79. doi: 10.5380/rvx.v16i1.78195