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Levels of Participation of Children and Adolescents in Research on Environmental Education in Hispanic America (1999-2019)

Niveles de participación de niños, niñas y adolescentes en investigaciones de educación ambiental en Hispanoamérica (1999-2019)

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Abstract

Historically, a whole participatory and horizontal tradition has been recognized in environmental education, even so, empirical research describes low levels of participation of children's and adolescents in this type of education and in its research field. Despite this, there are few investigations that measure participation, limiting these to describing case studies, which hardly allows a global idea of the levels of child and adolescent participation in the field. To clarify that, a systematized bibliographic review of environmental education research written in Spanish from 1999 to 2019 was carried out, in which children and adolescents participate in different degrees of involvement. The level of participation of each of these was coded using Roger Hart's ladder of child participation, which describes eight different rungs. This was correlated by statistical analysis and non-parametric tests with the year and country of publication, the type of education and the methodology used. The results indicate a progressive increase in the levels of child and adolescent participation from 1999 to date, as well as higher levels in non-formal environmental education, if qualitative methodologies are used to research and in authors from Argentina and Cuba. The importance of rethinking the place of children's and adolescents in the development of environmental education and environmental education research is discussed.

Keywords: adolescent participation, child participation, environmental education research, environmental education, systematized bibliographic review.

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Resumen

Históricamente se ha reconocido en la educación ambiental una tradición participativa y horizontal. Pese a ello, las investigaciones empíricas describen bajos niveles de inclusión de niños, niñas y adolescentes en este tipo de educación y en su rama investigativa: son escasas las investigaciones que miden esta intervención, limitándose a describir casos de estudio. Para precisar aquello, se realizó una revisión bibliográfica sistematizada de las investigaciones de educación ambiental escritas en español desde 1999 a 2019, en las cuales participaron niños, niñas y adolescentes en diferentes grados de involucramiento. Se codificó el nivel de participación por medio de la escalera de Roger Hart, la cual describe ocho peldaños distintos. Esto fue correlacionado mediante análisis estadísticos y pruebas no paramétricas con el año y país de publicación, el tipo de educación y la metodología empleada. Los resultados indican un aumento progresivo de los niveles de participación infantil y adolescente de 1999 a la fecha, como también niveles más altos en la educación ambiental no formal, si se consideran metodologías cualitativas para investigar (autores de Argentina y Cuba). Se discute la importancia de repensar el lugar de niños, niñas y adolescentes en el desarrollo de la educación e investigación ambiental.

Palabras clave: educación ambiental, investigación en educación ambiental, participación adolescente, participación infantil, revisión bibliográfica sistematizada.

Introduction

In recent years, international organizations such as the United Nations Children's Fund, Unicef, and the Childwatch International Research Network have called for improvements in standards of participation in research with children and adolescents (hereinafter CA), and young people (Ceballos-López & Saiz-Linares, 2019). In spite of this, the participation of these segment of the population in research processes is still incipient, with this age group usually being excluded (Graham, Powell, & Taylor, 2015; Powell, Graham, Taylor, Newell, & Fitzgerald, 2011). This situation is critical in low- and middle-income nations such as those in Hispanic America, where, as a result of their culture and their view of childhood and young people, the levels and quality of their participation in educational research are somewhat low (Navas, Martínez, Valdebenito, & Castillo, 2018).

Prominent youth leaders from Hispanic America such as Patricia Ramos (Spain), Dominga Espiñeira (Chile), Militza Lízbeth Flaco Suira (Panama), Bruno Rodríguez (Argentina), Jamie Margolin (Colombia), or María José Bejarano (Bolivia), have attempted to emphasize that their position is not comparable with that of their predecessors, since a large part of the responsibility for the problem resides with adults, but many of the proposed solutions come from young people and the new generations, which is not in line with the political responsibilities that have been granted to them (Liebel & Gaitán, 2019).

In this respect, CA complain that they have been excluded from one of humanity's greatest challenges, despite the fact that many of them are more aware and prepared in this regard than the adults who restrict their participation (Lawson et al., 2019). Because of this, they emphatically point out that they cannot continue to tolerate *not being heard*. In light of this, some researchers and decision makers (Hart, 2013; Liebel, 2007) have become interested in child and adolescent participation, looking into the degree of involvement of CA in environmental programs, systems, and projects (Green, 2015; Imhoff, & Brussino, 2013).

This has made it possible to understand child and adolescent participation as a polysemic construct and a complex process that involves the transformation of the social conditions in which CA develop (Susinos-Rada & Ceballos-López, 2012; Susinos-Rada, Ceballos- López, Saiz-Linares, & Ruiz-López, 2019). In this regard, participation is both a condition of action of a subjectivity, as well as the possibility of constructing more democratic spaces and societies (Fielding, 2012). Based on this notion of participation, scholars such as Hart (1992; 2013), Robottom (1993), and Robottom and Sauvé (2003) have been particularly interested in understanding the involvement of young people, children, and adolescents in social, educational, or research projects of an environmental nature.

There are undoubtedly sufficient reasons to consider this involvement: first, the participation of children and young people is an internationally established right and must be ensured; second, the inclusion of these social subjects enhances the programs and platforms of which they are part, as well as their transformative capacity; third, this participation brings with it a series of positive effects on people who belong to educational communities and the educational projects that it promotes; and fourth, it is an excellent tool to promote civic education and social responsibility with regard to the environment (García-Pérez & De Alba-Fernández, 2012; Mager & Nowak, 2012; Moreno-Fernández & García-Pérez, 2013; Trilla & Novella, 2011).

In this context, this study was intended to describe the different levels of participation of CA in environmental education (hereinafter EE) and the degrees of protagonism that coexist and differ from each other. In order to do this, we present some background information regarding the participation of CA in EE, as well as the studies that have been done in this field. Subsequently, we provide a systematic bibliographic review based on the work of Prosser and Romo-Medina (2019) and carried out using EE studies written in Spanish over the last 20 years, describing the different levels of participation indentified in that research.

Participation of CA in EE

In the specific case of EE, the participation of young people has been highlighted to the point of being considered an essential characteristic of the field of study (Espejel-Rodríguez & Flores-Hernández, 2012; Tréllez, 2015). This has been influenced by empirical research, which points to infrequent prominent participation on the part of CA in the development of environmental educational activities (Calvente, Kharrazi, Kudo, & Savaget, 2018; Matos-De Rojas, Pasek-De Pinto, Peña-Briceño, & Briceño, 2018). Considering this, EE has a double challenge: to contribute to the abandonment of "anthropocentrism" and capitalist production/consumption logics, on the one hand, and, on the other, to work on forms of adult-centric participation in education (Bywater, 2014; Lay-Lisboa, & Montañes, 2018), which make it difficult for CA to truly engage in projects and actions.

Furthermore, various authors have identified certain approaches of a scientific nature in the field and with traditional models of dissemination of knowledge regarding environmental problems and cycles, reducing the comprehension of these phenomena to technical and accounting dimensions in terms of sustainable development (Jensen, 2002; Reid, Jensen, Nikel, & Simovska, 2008). There are also a series of contextualized and critical educational experiences oriented towards change and transformation, which are intended to broaden environmental views towards local terms of governance, climate change, inclusive management of risk and disasters, food security and sovereignty, or community environmental management in general, to name but a few (González-Gaudiano & Meira-Cartea, 2020; Moreno-Fernández & García-Pérez, 2013). In light of this, another challenge has also emerged: the promotion of participatory initiatives in education, providing spaces where the experience and opinion of CA is considered for building and managing knowledge (Jensen & Schnack, 2006).

Here we should mention international educational programs based on a model that promotes the active participation of CA. These include the Eco-schools, Blue Flag, Green Flag, and Green Key (Moreno-Fernández & Navarro-Díaz, 2015; Perales-Palacios, Burgos-Peredo, & Gutiérrez-Pérez, 2014); Young Reporters for the

Environment, or the Learning About Forests (LEAF) program of the Foundation for Environmental Education (De Angelis, 2016). Finally, from a historical perspective, we should also note the contribution of Agenda 21 to the development of participatory EE programs of a local nature (Pozo-Llorente, Gutiérrez-Pérez, & Poza-Vilches, 2019).

This has also been a relevant topic in dialogue between academics and professional researchers in this field. A fine example of this is the *13th Invitational Seminar on Environmental Education Research*, which took place in 2015 in Bertioga, Brazil. This event served to consider the contributions of Paulo Freire's pedagogy to EE and research on EE (henceforth REE), highlighting the need to build educational research in local contexts and based on those who participate in it (Hart, Hart, Aguayo, & Thiemann, 2018), giving greater importance to affections and aesthetics (Payne, 2018), and having a decolonizing view of environmental knowledge that emerges from processes of knowledge production (Payne, 2018).

Participation of CA in REE

REE is currently understood as educational research that focuses on the relationships between environmental and educational aspects, whether in institutional, pedagogical, didactic, or personal terms, among others (Briggs, Trautmann, & Phillips, 2019). This, therefore, takes place in formal and non-formal settings where pedagogical knowledge converges with social, popular, indigenous, and environmental knowledge (Caride Gómez, 2008). In this field, the particularities of the social contexts and the ecological-cultural realities in which the different people are positioned and related should be taken into account, while the causes and possible consequences of certain environmental problems are revealed collectively (Calixto-Flores, 2012).

According to Benayas, Gutiérrez, and Hernández (2003), some of the most significant contributions provided by REE are that it serves as an instrument for the professionalization, recognition, and legitimation of the sector and for discrimination and control of the quality of planning and design of programs that differentiate between successful and unsuccessful practices. It is also serves to inform on transparency and equity, along with the political and social implications derived from the evidence obtained. And, lastly, it can be used for reflection, analysis, empowerment, activism, and socio-environmental change for professionals, students, and communities (Benayas et al., 2003).

Reviews of Spanish-language literature in this field have made it possible to establish that Spain, Venezuela, Mexico, and Colombia are the countries in which most research has been done; *Revista Luna Azul* is the journal that has published most papers on this subject, and, from 2006 onwards, the number of these publications has increased. Even so, the same researchers who have carried out bibliometric reviews in the field have pointed to the importance of questioning the relationships of EE and REE with certain groups of subjects (González-Gaudiano & Arias-Ortega, 2015; Medina-Arboleda & Páramo, 2014; Prosser & Romo-Medina, 2019; Sepúlveda, 2015). With regard to CA, this was addressed in research by Martínez-Agut, Ull, and Aznar-Minguet (2014) that analyzes official documents in Spain to regulate the development of Early Childhood Education for Sustainability (ECEfS).

The authors underline that activities and methodologies are generally offered for use with CA, but that the regulations for professionals and institutions that seek to promote ECEfS include few criteria, which creates difficulties to develop the necessary skills to implement it correctly (Martínez-Agut et al., 2014). On the basis of this statement, it could be considered that the protagonism of CA is an implicit element of EE, but that it has rarely been encouraged and assessed, like so many other topics in this field[1].

1. For example, ongoing education of the teacher, the recovery of popular and traditional knowledge, the galvanization of the educational community towards sustainable change that transcends the educational establishment, ecofeminism and the gender perspective in EE, as well as inclusion of the needs, interests, and particularities of the territory and local communities.

The role that REE can play here is fundamental, since processes of this kind can mean real revolutions in participation in the school, involving high degrees of participation on the part of children and adolescents, or they can be simply experiences where an adult appears with an instrument that provides scant explanation, which is applied rapidly, and the results of which are passed on to their university or research team. In this scenario, the levels of participation of CA in REE or studies on EE are as varied as the researchers, research teams, schools, teachers, students, and educational experiences (Ceballos-López & Saiz-Linares, 2019).

Of the few research works that have been aimed at revealing these particular conditions of participation, we should mention the qualitative study carried out by Prado-Fuentes and Pérez-Campusano (2011) with young university students in Spain. In this paper the authors wanted to examine this group's levels of participation in the university waste management program, identifying them as "informative" and "consultative". In another qualitative study conducted by Matos-De Rojas et al. (2018), interviews were carried out with 50 EE teachers from Venezuela, asking them about the level of participation of CA in their activities. Based on the analyses carried out, it was found that only 17% of these teachers promoted truly participatory activities.

As outlined above, it is difficult to use these case studies to generalize for the entire region, or even for the specific countries, which makes it hard to analyze regional trends on the subject. Similarly, although there are other reviews that study the inclusion of CA in EE, they do not incorporate the aspect of participation as something essential, limiting themselves to the description of bibliometric or thematic trends within the field.

In this framework, the research carried out here goes beyond the descriptive bibliometric review (DBR) conducted by Prosser and Romo-Medina (2019), diversifying the search strategies and data analysis in order to examine the level of participation of CA in REE. In this review, the authors identified a growing and discontinuous progression of articles—mostly from Spain—that were published in *Revista Luna Azul*, with the research being mainly empirical and methodological. They also described critical nodes of EE with CA and at the early childhood level, such as innovative methodologies, the predominance of concepts such as social representations or attitudes, the didactic use of animals, or community environmental education. Although this study was a contribution to the field, it did not allow us to examine the different levels of participation of CA in EE studies, which is why we considered it necessary to begin a new research process.

We should also mention that the previous DBR was based on a line of EE in Anglo-Saxon and Scandinavian countries, which is aimed at understanding the particularities of the field in working with CA and, above all, in early childhood (Davis & Elliot, 2014), while this paper is intended to describe the levels of participation in the literature, following a line of development characteristic of Spain, Latin America, and the Caribbean (Calixto-Flores, 2012; Caride Gómez, 2008).

This is essential in Hispanic America, since representatives of the region have argued that participation is a basic principle of EE (Calixto-Flores, 2010; García-Pérez & De Alba-Fernández, 2012; González-Gaudiano & Arias-Ortega, 2015; Tréllez, 2015). For this reason, it is important to conduct research that reflects the different levels of participation of CA in EE and its studies, in order to reveal experiences with a clear participatory tendency, as well as others in which the new generations are users or recipients.

Therefore, the general objective of the study was to identify the levels of participation of CA in the articles published in specialized journals and Ibero-American databases over the last 20 years. In order to do this, we used Roger Hart's (1992) ladder of participation, seeking to describe different degrees of involvement of CA in educational studies and/or experiences in terms of them being co-researchers, active protagonists, or merely the objects of study. The specific objective was to identify the various levels of participation through the analysis of a series of bibliometric variables of interest, which were correlated with the rungs suggested by Hart (1992).

Methodology

In this study we carried out a systematic bibliographic review (SBR). This methodology seeks to identify trends and critical nodes based on a series of criteria that allow work with bibliographic information collected in previous research (Grant & Booth, 2009). It is used for its systematicity when analyzing the main problems in a field, in order to explore areas of knowledge that are still incipient, as well as to identify the state of the art, new trends, and opportunities for research (Booth, Sutton, & Papaioannou, 2016).

During the course of this research, we followed the recommendations of various authors (García-Vinuesa & Meira-Cartea, 2019; Manchado-Garabito, Tamames-Gómez, López-González, Mohedano-Macías, & Veiga de Cabo, 2009; Sánchez-Meca & Botella, 2010) both to conduct the study and for the description of the method, particularly to develop the search strategy, the criteria for inclusion and exclusion, the definition of the study variable (levels of child and adolescent participation), and for the process of reviewing and extracting the data itself.

Search strategy

We conducted a search for papers published in the SciELO, Dialnet, Redalyc, and JSTOR databases and in the Digital Repository of Universidad de Chile. We also reviewed all the issues of *Revista Luna Azul* published by Universidad de Caldas, a Spanish-language publication specializing in environmental issues, selected for this case because previous reviews pointed to it as being the most influential journal in the field of EE (Medina-Arboleda & Páramo, 2014; Prosser & Romo-Medina, 2019; Sepúlveda, 2015). We entered the following Boolean code in all these academic platforms:

Infancia OR Juventud OR Niñez OR Adolescencia OR Infante OR Joven OR Niño OR Niña OR Adolescente[2]

AND

Educación ambiental OR Educación para el desarrollo sostenible OR Educación para la sustentabilidad[3]

In additionally, and in order to make the search more rigorous, we also tracked other studies by introducing a series of keywords from various thesauri, namely: *infancia*, *niñez*, *adolescencia*, *juventud*, *educación ambiental*, *educación para el desarrollo sostenible*, *educación para la sustentabilidad*, *sostenibilidad*, and *ambiental*[4].

To carry out this process, the authors used the same search syntax and a significant group of articles from a previous DBR (Prosser & Romo-Medina, 2019), which, added to the new search strategies and study objectives, resulted in differences in both the number of studies identified and included, as well as in the analyses used throughout the methodologies and results.

2. Since the searches were conducted among Spanish-language publications, the search terms clearly had to be in Spanish. They can be translated as follows: Infancy OR Youth OR Childhood OR Adolescence OR Infant OR Young person OR Boy OR Girl OR Adolescent.
3. As above, these terms can be translated as follows: Environmental education OR Education for sustainable development OR Education for sustainability.
4. We introduced these terms because EE is given various different names and addressed in different ways in Hispanic America depending on the position of each author; the same is true with the concepts of childhood and youth. In order to look more closely at the different positions that coexist in education for climate change (ECC), see the study by González-Gaudiano and Meira-Cartea (2020) and the review of research with secondary students by García-Vinuesa and Meira-Cartea (2019). These terms can be translated as follows: infancy, childhood, adolescence, youth, environmental education, education for sustainable development, education for sustainability, sustainability, and environmental.

Criteria for inclusion

Selection of the studies was carried out jointly by the three authors, with a condition being a consensus on meeting the inclusion criteria for each of the selected studies. Assessment of this condition was dichotomous and qualitative, that is, the papers were classified as "accepted" or "rejected", depending on the existence of the following criteria:

1. Empirical research on the discipline and/or related disciplines disseminated through scientific communications.

2. Published in Spanish in the last 20 years (from 1999 to February 14, 2019). What we sought with this filter was to access the field of study carried out in Hispanic America.

3. Published in scientific journals with a peer review system to ensure their quality (Liberati et al., 2009).

4. Empirical studies that considered CA as participants, including young people who were still in the school system.

We created a matrix of bibliographic records to which we added the papers that met the aforementioned criteria. The study data were distributed in various columns of a Microsoft Office Excel spreadsheet, which were given the following labels: authors, title of paper, year of publication, name, URL or doi (if there was one), country, sample number, sample age, research methodology, citations, field of education, focus on EE, abstract, and keywords. In the spreadsheet, we assigned a column to designate the level of participation for each study, based on the taxonomy used for the analysis.

Criteria for exclusion

Articles were excluded at two stages: in the first, studies in which there was insufficient information to determine the effective participation of CA were discarded, as were those articles in which, although the object of study was CA, the methodologies were applied to adults. In the second stage, publications that were reviews or instrumental studies were excluded. In order to carry out both types of exclusions, we paid special attention to the methodology section of the texts, identifying any mention (or not) of the participants and references to the techniques to produce and analyze the information.

In order to describe this process graphically, we created a flowchart (see Figure 1). At the beginning of the process, we entered the Boolean code into the search engines and identified 4,424 studies. Based on these, we selected 205 papers that met the inclusion criteria and then carried out the first stage of exclusion, leaving a total of 180 papers. Finally, we decided to leave out instrumental studies and reviews, due to the evident low participation of CA in them and in order to reduce the bias in the results. After this was done, we produced a final corpus of 119 empirical studies.

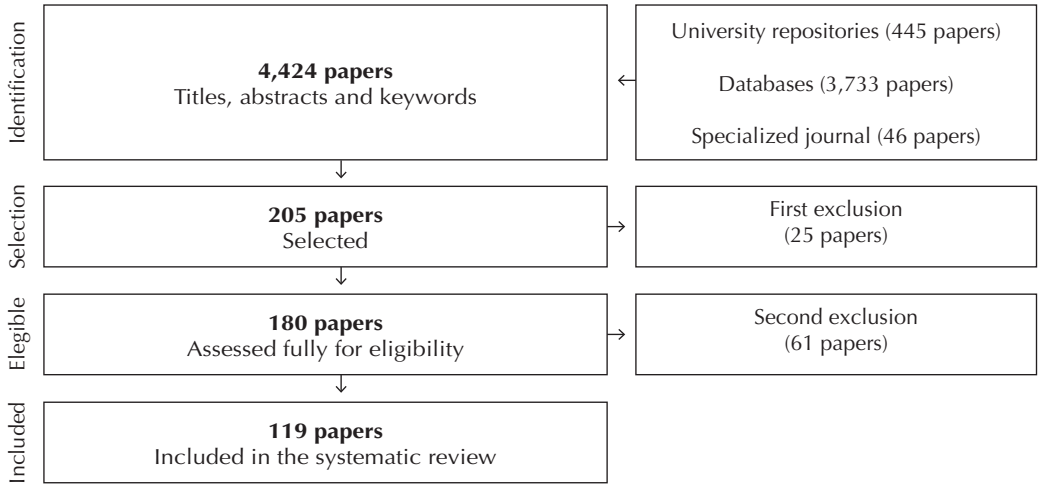

Figure 1. Flowchart of the systematic bibliographic review.
Source: Prepared by the authors based on the PRISMA statement (Liberati et al., 2009).

Coding

The papers selected were distributed equally between the three authors, after which we carried out a series of superficial readings—independently and separately—to establish the classifications of the studies. We conducted group discussions about studies on which there were doubts or on which the other authors disagreed with the assessment offered by the first reader. For the definitive assessment of the works, all the readings were crosschecked and the reliability criterion was that there should be 100% consensus. The variables of interest for this study are described below.

Level of child and adolescent participation in EE. In this research, this construct was understood as the degree of involvement and protagonism of one or more CA in environmental issues, activities, and projects that concern them in various spheres of their life (Susinos-Rada & Ceballos-López, 2012). In this respect, although there are several different approaches to grade the participation of CA (e.g., Trilla & Novella, 2011), we decided to use Roger Hart's (1992) ladder of participation because of its widespread recognition in EE (Davis, 2005; Læssøe, 2010; Prado-Fuentes & Pérez-Campusano, 2011) and due to the operational clarity of the eight rungs proposed (see Table 1).

Table 1
Levels of participation in the taxonomy of Roger Hart (1992)

Category	Definition	Score
Young people-initiated, shared decisions with adults	This consists of inclusion of the participation of adults in processes initiated by children or adults.	8
Young people-initiated and directed	Refers to when CA autonomously decide to initiate and carry out a research process without the participation being directed by adults.	7
Adult-initiated, shared decisions with young people	Refers to when, once a project has been initiated, adults decide to share the decisions on its development with CA.	6

Consulted and informed	This is when the project is initiated and directed by adults and the CA fulfill the role of consultants, understanding the process and their opinions being considered important.	5
Assigned but informed	Refers to when CA volunteer for a project initiated by adults, and understand their intentions and the significant role that they will perform within it.	4
Tokenism	Entails cases in which the CA apparently have the possibility of expressing themselves, when in reality they have little or no influence on the development of the research project.	3
Decoration	Refers to occasions when the CA have no idea what the project consists of, nor any possibility of influencing it, so they only make an appearance.	2
Manipulation	Entails cases in which the CA do not understand the objective of the research or their actions in it. Therefore, adults require their participation for instrumental purposes.	1

Source: Prepared by the authors.

In order to identify the level shown by each of the papers, we developed a decision tree that consisted of six indicators (see Figure 2): the first of these checked whether the participants understood the objective of the study or action; the second, whether they understood and if their role within it had been explained to them; the third, whether their role was significant or symbolic; the fourth, whether their opinion was relevant or not; the fifth, whether the process was initiated by adults or by CA, distinguishing in the case of the former whether, once the research began, their opinions were consulted or decisions were made with the CA; and the sixth, in those cases that were initiated by the CA, whether they were carried out by the CA or with adults.

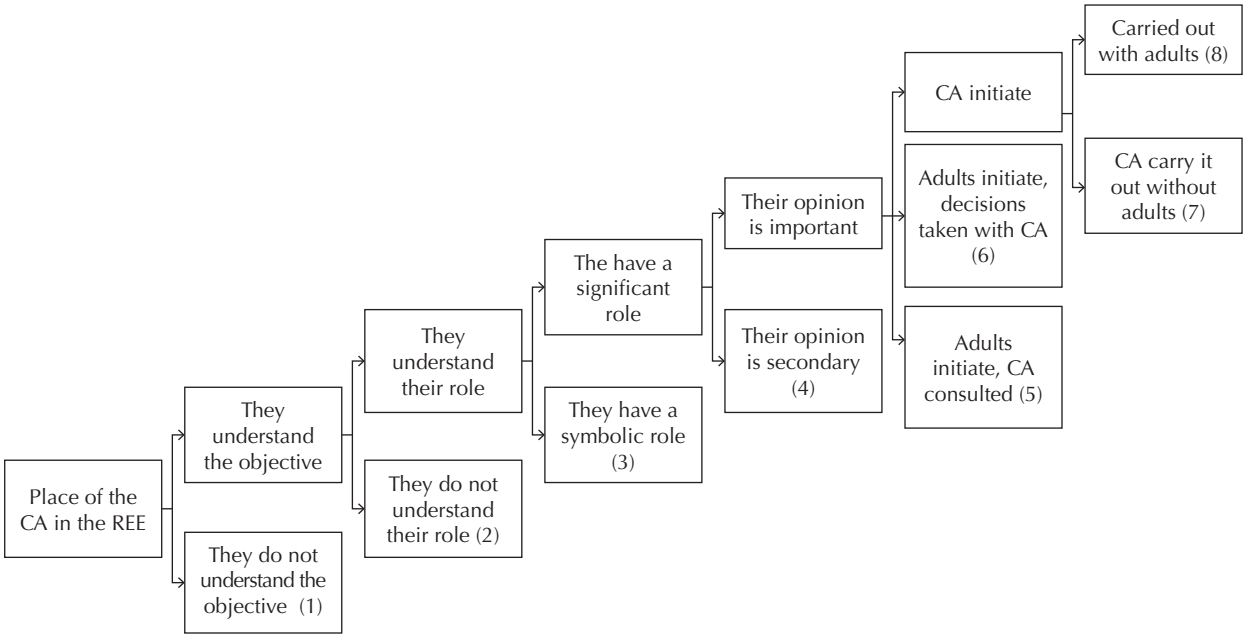

Figure 2. Decision tree to establish levels of participation.
Source: Prepared by the authors.

Year and country. The year of publication and the country where the research in EE was conducted were considered for each of the papers.

Types of education. Using the definition of María Novo (1996), a distinction was made between "environmental education that takes place in school settings (formal education) with that which is carried out by non-governmental organizations, environmental groups, municipalities and autonomous communities (non-formal education)" (p. 75). We therefore discussed formal environmental education (FEE) and non-formal environmental education (NFEE).

Methodological approach. Based on the review by Green (2015), we identified three methodological approaches. The first involves a quantitative methodology with a marked positivist approach aimed at testing hypotheses by measuring variables that are collected from standardized instruments, from which numerical data are eventually extracted for statistical analysis. The second is qualitative methodology oriented to the profound understanding of phenomena researched using interpretive, descriptive, narrative (for example, written, verbal, visual, etc.), and ethnographic approaches, among others. The last is the mixed methodology, in which data collection and analysis is carried out in a quantitative and qualitative way, and it can be done in a sequential, parallel, or mixed manner.

Analysis

Given the descriptive nature of this review and the use of vote counting as a measurement strategy, we carried out statistical analyses of heterogeneity for each of the variables to study the data and their level of significance was examined using the Chi-squared test (Franke, Ho, & Christie, 2017). Then we compared the level of participation according to the different variables considered in the study using the nonparametric Kruskal-Wallis (K-W) test, which takes into account average ranges (AR) of ordinal variables. These analyses were included with the aim of making the results more robust and going beyond the mere descriptive presentation, as is usual with this type of review (Ardoin & Bowers, 2020).

Results

Characterization of papers

Table 2 shows the characteristics of the 119 studies that were considered for this research. In the table we can observe a sustained and significant increase (in the number of publications in the last 20 years, with an average annual increase of 5.95 papers.

As regards the countries, we can see that Spain (21.8%), Colombia (21%), and Mexico (19.3%) lead production of REE. The countries with the least production are Ecuador, Paraguay, Puerto Rico, and Brazil, with only one paper published. With respect to the latter nation, it should be noted that this review only included articles in Spanish, so this figure may be underestimated.

We also found that the research described in these papers mostly refers to FEE (71%) and use qualitative methodologies (52%). Finally, the categories in each of these variables show significant differences according to the Chi squared test.

Table 2
Characterization of papers on EE in the last 20 years (n = 119)

Variable	N	%	$X^2_{(gl)}$	Variable	n	%	$X^2_{(gl)}$
Year of publication				*Area of EE*			
1999-2003	3	3%	$71.151_{(3)}$**	Formal EE	85	71%	$21.186_{(1)}$**
2004-2008	16	13%		Non-formal EE	34	28%	
2009-2013	36	30%					
2014-2018	64	54%					
Country				*Methodology*			
Spain	27	22.7%	$133.588_{(13)}$**	Qualitative	62	52%	$19.479_{(2)}$**
Colombia	25	21.0%		Mixed	32	27%	
Mexico	23	19.3%		Quantitative	25	21%	
Chile	10	8.4%					
Cuba	9	7.6%					
Venezuela	9	7.6%					
Costa Rica	5	4.2%					
Peru	4	3.4%					
Argentina	3	2.5%					
Other countries	4	<1%					

Note: **p < .001.

Source: Prepared by the authors.

Levels of participation

Using Hart's taxonomy (1992; 2013), we found that none of the 119 papers analyzed indicated a level of participation lower than three points (manipulation and decoration) or higher than six (initiated and directed by CA and projects initiated by young people and shared with adults). Of the levels of participation found, allocation and information are present in 41.2% of the papers, followed by symbolic participation (28.6%), consultation and information (21.8%), and projects started by adults, but shared with CA (8.4%).

Levels of participation according to the study variables

As we can see in Figure 3, the degree of diversification of participation in EE papers increased in the last four years. At the beginning of the 2000s, symbolic participation was predominant, while the assigned but informed level is currently the most common, with those initiated by adults but sharing decisions with CA only beginning to appear in 2008.

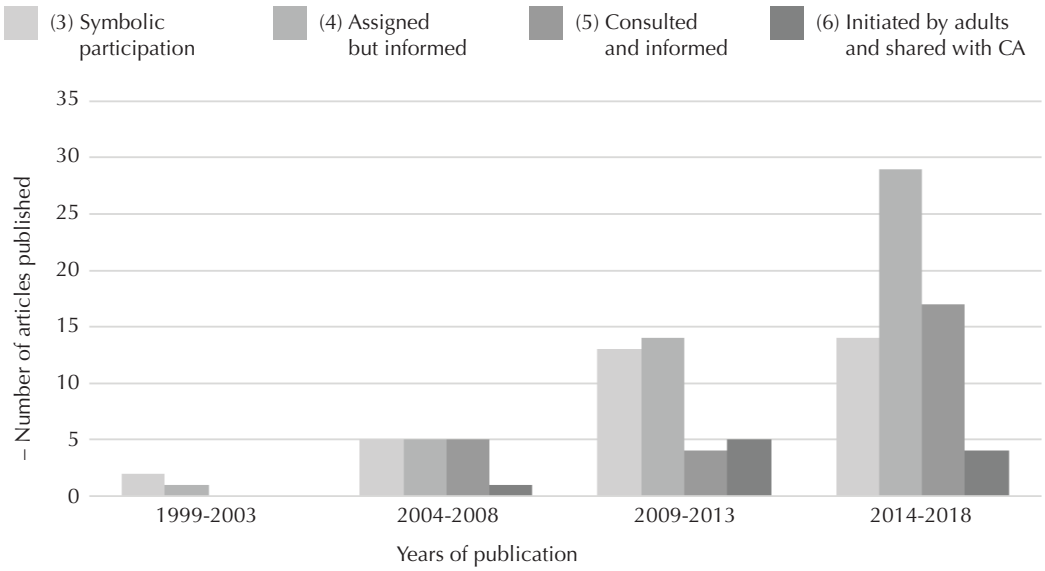

Figure 3. Levels of participation in REE in the last 20 years.
Source: Prepared by the authors.

To analyze the relationship of the level of participation by country, we created a ranking of continuous values according to the levels of participation on the Hart scale (1992; 2013), putting research with the absence of child and adolescent participation at the lowest end (score 0) and the highest at the top level (score 1).

We generally found that the countries have a level of participation of 0.44 (*SD* = .073). The country with the highest level of CA participation in EE is Argentina (0.52), although with only three papers, and those with the lowest levels of participation are Ecuador, Paraguay, and Puerto Rico, all with a rate of 0.29. It should also be noted that countries such as Spain, Colombia, and Mexico have the highest numbers of articles and levels of participation above the average. This can be seen in Figure 4, which shows only Hispanic America countries that met all of the review criteria.

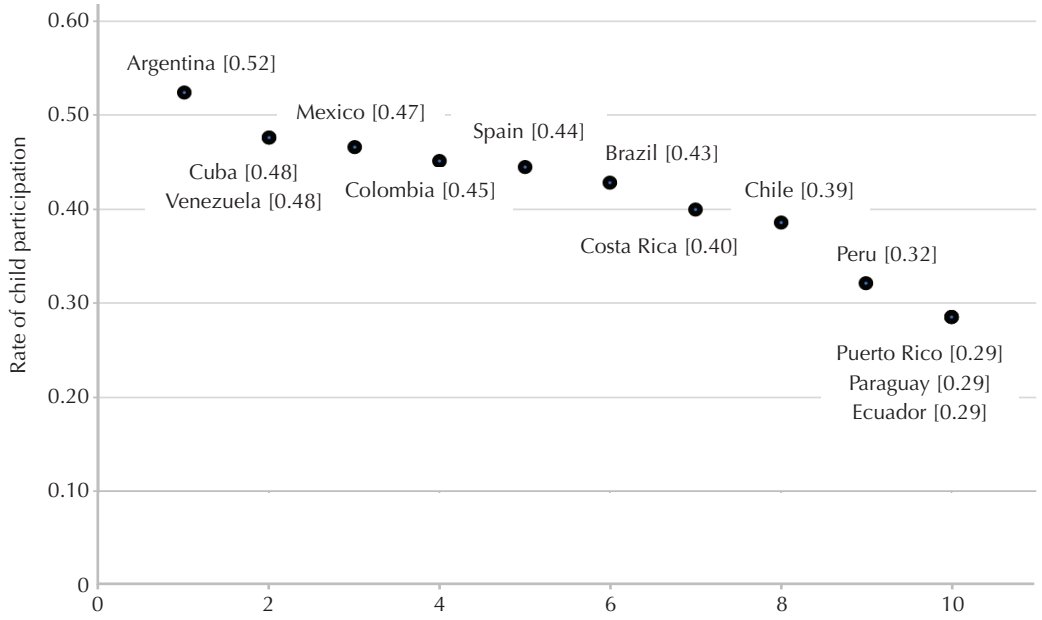

Figure 4. Levels of participation in the last 20 years by country. In parenthesis the average participation by country.
Source: Prepared by the authors.

The levels of participation in the papers were compared according to the scope and methodology of REE, identifying significant differences in all the variables analyzed. With regard to the scope, we found that the participation (is higher in NFEE studies (rp = 79.29). In turn, in relation to the methodological approach (, qualitative studies promote greater participation (rp = 71.85) than mixed methods (rp = 58.56) and quantitative (rp = 32.44) methods.

Final Discussion

This review was intended to measure the level of participation of CA in EE studies published in Spanish during the last 20 years. This was carried out in order to provide a global overview regarding participation in EE research processes. In addition to this, involvement is a right of CA, which mobilizes processes of transformation of the spaces in which they participate, which generates a series of positive effects on people and communities, and is a reliable tool to promote the development of eco-citizenship (Mager & Nowak, 2012; Trilla & Novella, 2011).

In this respect, this study serves to alert professionals interested in this field, since, due to the magnitude of current challenges, it is essential for EE to consolidate participative education and research, as well as its effective bases for disciplinary development (Briggs et al., 2019; García-Pérez & De Alba-Fernández, 2012). For this reason, the processes of (co)education and research with potential eco-citizens should not be based on the mere transfer of environmental knowledge and problems, on the adult-centric technocracy of managing these initiatives, nor on the rhetoric of immaturity to exclude CA from certain stages (Jensen, 2002; Jensen & Schnack, 2006; Le Grange, 2009; Moreno-Fernández & García-Pérez, 2013).

This is particularly important in a field such as EE, because it specifically seeks to question the network of relationships that are built socially with the biosphere and the environments that are considered to be natural, being fundamental from a perspective of participation, which is questioned by the underlying logics of power present in countries, territories, and schools (Robottom, 1993; Robottom & Sauvé, 2003). In any case, it should be noted that this process is not only the product of a rediscovery and reinterpretation of an academic, political, and, essentially, disciplinary field, but it is also the result of the incessant social pressure of a growing political group of young people and CA, who are forcefully demanding greater participation in the definition and solution of environmental problems (Liebel & Gaitán, 2019).

In this respect, the results of this study offer a highly relevant overview: although to a lesser extent, researchers in EE have gradually fostered spaces for research that consider and promote the participation of CA. However, most studies remain at the level of mere assigned participation. This is consistent with the findings of previous empirical research (Matos-De Rojas et al., 2018), which also agrees that the level of participation ranges between assignment and information and, at best, consultation of the participants (Prado-Fuentes & Pérez-Campuzano, 2011).

Meanwhile, case studies and reviews conducted previously also indicate that NFEE promotes greater participation (Calvente et al., 2018). Similarly, systematic reviews about CA in education and EE have shown that the level of their participation is higher in research that uses qualitative methodologies (González, Hernández-Saca, & Artiles, 2017; Green, 2015).

Although the results could be considered to be somewhat discouraging, it should be noted that the interest in participation is typical of the environmental rationality that has developed in Spain, Latin America, and the Caribbean (González-Gaudiano & Meira-Cartea, 2020; Tréllez, 2015) and that, therefore, there must be certain obstacles or difficulties that prevent the development of a transformative synthesis that cultivates the educational systems and research teams in the region, in order to develop greater participation of students (Calixto-Flores, 2010).

According to previous studies, the amount of time it takes to generate participatory spaces, the low level of training and civic leadership of educators and researchers, the lack of practice of the participating CA, and the deficient state tools to promote participation can act as obstacles even in those spaces where the aim is to promote it (Bywater, 2014; Varela-Losada, Pérez-Rodríguez, Álvarez-Lires, & Álvarez-Lires, 2014). For this reason, it is essential for educators and researchers to be trained in these skills and to be capable of reflecting on and critically evaluating their own practice and their power relationships with students (García-Pérez & De Alba-Fernández, 2012).

Limitations

Based on the above, it is necessary to outline an obvious first limitation: no CA took part in this review, nor were any of them asked their opinion on how it should be carried out. Future research should continue to think creatively about how to promote increasingly more and better levels of participation, even in processes of review and synthesis. As regards the latter, future systematic reviews and empirical studies could investigate and measure the "quality" of children and adolescents' participation.

Another limitation of this study is that a series of community and popular EE projects are usually transmitted and communicated by means other than academic-rational-written works, so the inclusion of these types of projects requires more advanced methodologies and greater investigative resources (Guevara, Whelan, & Flowers, 2009). Also, given the Portuguese language barrier, we cannot say with certainty whether the results for Brazil are estimated correctly. In this same vein, the exclusion of international databases such as Scopus or Clarivate may also skew the data obtained in this study.

With regard to the methodological limitations, this review used an intentional criterion: the search for articles in Spanish published in Ibero-American journals, which could exclude research conducted in this region, but published in English. We assume this bias, given that use of English is not widespread in Ibero-America, so it is likely that EE professionals access information via texts in Spanish. This decision could influence the number of papers found and, therefore, the estimate of the levels of participation by country. Future studies should consider the language of publication as a relevant variable and compare whether the levels of participation indicated in the papers vary with the language of publication or even with the level of impact of the journal in which they are published.

Finally, future research might consider creating a more complex matrix of information, including variables such as the age of the participants, the sample size, the time the research was carried out, the content of the activities, and the gender of the researchers. It would also be interesting to investigate other aspects of participation that transcend the measurement of levels or degrees and contribute more holistic views. For example, it would be novel for research to address Lundy's (2013) model of participation, examining the spaces, voice, audience, and influence of CA in environmental educational processes.

All things considered, the aim is for this study to be an important contribution when it comes to thinking about the participation that we have allowed CA to have, reaffirming the importance of them being active subjects in the environmental educational processes in which they are involved, instead of acting as mere receptors. That said, if REE serves to improve the field, the inclusion of these social actors implies not only guaranteeing their rights, but also contributing to the enhancement of the various phases of EE programs and initiatives: they can no longer be seen as merely as a promising future, because in order to address our crisis, children and adolescents are the indispensable people of the present.

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