The Version of Record of this manuscript has been published and is available in ENVIRONMENTAL EDUCATION RESEARCH, 2025, https://www.tandfonline.com/doi/full/10.1080/13504622.2025.2599808

Ferreira da Silva, D., Fernandes-Jesus, M., & Carvalho, A. (2025). Engaging young people with alternative climate futures: cultivating political imagination through participatory methodologies. *Environmental Education Research*, 1–27. https://doi.org/10.1080/13504622.2025.2599808

Engaging young people with alternative climate futures: cultivating political imagination through participatory methodologies

Daniela Ferreira da Silva | b13120@ics.uminho.pt Department of Communication Sciences, Institute of Social Sciences, University of Minho, Portugal; Centre for Research in Anthropology (CRIA-UMinho)/IN2PAST, Rua Da Universidade, 4710-057 Braga, Portugal.

Maria Fernandes-Jesus, School of Psychology, University of Sussex, United Kingdom

Anabela Carvalho, Department of Communication Sciences, Institute of Social Sciences, University of Minho, Portugal; Centre for Research in Anthropology (CRIA-UMinho)/IN2PAST, Portugal

ABSTRACT

Young people face challenges in envisioning alternative climate futures due to intersecting inequalities, power imbalances, and the adult-dominated climate discourse. They are often depicted as either powerless victims or heroic activists, yet their political agency is constrained by age-related bias and limited opportunities for engagement within conventional political systems. In this context, exploring the inherent political nature of climate change is a central point of critique and experimentation in social research. Participatory methodologies may offer a way to overcome structural barriers as they can bolster more horizontal relationships with adults and decision-makers. Such approaches open space for political discussion, help uncover power dynamics, and support the exploration of alternative climate futures. In doing so, participatory approaches contribute to rethinking the role of young people as political agents in contemporary society. This critical review examines published research that explores how participatory methodologies can encourage young people to reflect on their political imaginaries regarding climate change and their role as agents of change. Such methodologies can function as spaces for resistance and community capacity-building while also nurturing the imaginative potential that may later shape the arenas in which young people exert influence.

KEYWORDS

Participatory methodologies; political imagination; political agency; young people; climate change;

SUSTAINABLE DEVELOPMENT GOALS

SDG 13: Climate Action

Introduction

Youth-led climate demonstrations around the world [1] have attracted significant scholarly attention, with researchers examining participants' profiles, political demands, and communication strategies (de Moor, 2022; Neas et al., 2022; Piispa & Kiilakoski, 2022). Climate related action (e.g., protests, demonstrations) reflects both young people's determination to be heard on an issue that directly shapes their future—the impacts

of climate change — and their frustration with the inefficacy of conventional participation methods in addressing the crisis (Bowman, 2019).

Despite being one of the groups most affected by climate change, young people have been largely sidelined in climate policy-making (Care About Climate, 2024; Corner et al., 2015; Thew et al., 2022). Many perceive themselves as excluded by institutions that fail to respond adequately to the problem (Holmberg & Alvinius, 2022). Hickman et al. (2021) document feelings of "betrayal" and "abandonment" among young people towards governments and adults. Not only do they contest the inefficacy and inertia of governments in acting on the urgency of climate change, but they also see their concerns overshadowed by other emerging social problems and even a return to fossil fuel-dependent policies (e.g., Hynd et al., 2022). In this context, young people exhibit a strong wish for urgent action in the present and insecurity about the future (Holmberg & Alvinius, 2022).

This insecurity is intertwined with the challenges young people encounter in projecting themselves into the future and imagining more positive futures (Hickman et al., 2021; V. Jones & Podpadec, 2023; Levrini et al., 2021). Young people face ageist biases and adultism judgments when trying to raise their voices in broader public spaces (Bergman & Ossewaarde, 2020; Malafaia, 2022). Typically, the voice of adults (represented in institutions such as the media, formal education and political institutions) prevails in the climate change debate, undermining or devaluing the concerns and actions of young people.

Considering the complexity and worsening condition of climate change, the development of critical thinking skills and political imagination is required to encourage young people to engage in processes of social change (Bentz, 2020; Levrini et al., 2021).

Nevertheless, structural barriers that constrain political imagination persist and should be read critically (Herbert, 2021; Salmenniemi et al., 2024). For this purpose, there are strong reasons to facilitate safe and informal spaces for young people, allowing them to express their voices, their current knowledge about climate change and stimulate their political agency (Rebelo et al., 2024). Following others, we see political agency as the capacity to navigate entrenched socio-political structures—which can either enable or constrain participation—, to explore the political system, hold powerful social actors accountable, and demand (and possibly perform) change (Orman, 2022; White et al., 2022). Political imagination can be conceptualized as the capacity and practice of reflection on people's (personal and collective) political and social place in the world (Moore & Milkoreit, 2020). It entails the way people think about how society is and could be organized, the roles of the social agents that live in it, and the (unequal) dynamics of power (Machin, 2022; McAfee, 2017).

Reflecting on how young people have been positioned in the climate change debate, this paper aims to investigate potential ways in which research can contribute to the transformation of these issues. Therefore, we propose that participatory methodologies can be used to reduce power imbalances young people face within the climate change debate and to work jointly to encourage and inspire them to act (Rebelo et al., 2024). Therefore, by recognizing the lived experiences of young and

encouraging their political imagination, research can help to encourage their political agency towards the exploration of alternative climate futures. This means repositioning young people as active contributors and agents of change rather than passive recipients. It entails viewing young people as capable of informing, setting priorities, thereby recognizing their expertise and potential (Fine et al., 2007). Such an approach moves away from hierarchical or traditional roles and promotes equality in participation, where young people are seen as partners with valuable insights and influence (cf. Cahill & Dadvand, 2018; Thew et al., 2022).

This paper starts by examining two dimensions of young people's engagement in the climate change debate. First, we consider how young people have been positioned in the climate change debate, including the adultist biases that constrain their political agency. Second, we explore how young people position themselves and take action in the climate change debate, drawing on how political agency has been conceptualized and promoted in the literature. We then discuss how political agency relate to young people's political imagination on climate issues. After a brief note on the paper collection process (Methodology), we present the participatory methodologies identified in our review through two creative approaches (Findings). The paper concludes with a discussion of key dimensions that should guide future methodological approaches, the challenges in implementing participatory designs, advancements in climate change education towards more justice frames and reflection of the value of participatory methodologies in mobilizing change (Discussion).

How have young people been positioned in the climate change debate?

Climate change is a complex political issue, with entrenched power asymmetries, often framed in conventional media in negative, apocalyptic, depoliticized and techno-centred terms (Moser, 2016; Swyngedouw, 2010). In education settings, climate change has been generally construed as a highly top-down, science-based issue (Rousell & Cutter-Mackenzie-Knowles, 2020). These types of discourses limit a critical assessment of social and political contingencies about climate problems, restrict the voices of more marginalized social agents, including young ones (Kayumova & Tippins, 2021), and hinder the discussion on transformative climate action and just climate futures (Pepermans & Maeseele, 2016; C. Trott, 2021).

Several studies point to the depreciation of young people's voices in different contexts and notably in media settings. In the analysis of media coverage of the German Fridays for Future, von Zabern and Tulloch (2021) found that although media gave protesters a voice, they typically portrayed them in an apolitical way, thus undermining the protesters' agency and reproducing existing power structures. In a study on how Belgian media frame climate activists, Poot and Bauwens (2023) arrived to a different conclusion: newspapers contributed to a representation of young people "who are capable of voicing their demands; incentivize future-oriented action; are trustworthy, credible, solid, and knowledgeable agents; and bring a message of hope." (2022, p. 12). However, this analysis was conducted at the beginning of the protests in Belgium (January–March 2019), and the authors foresee the

possibility of a more critical and negative framing over time. That was precisely observed in the television coverage of the youth climate movement in Portugal: Initially (2018/19), youth protests were portrayed positively and acknowledged for their political relevance, although in some instances seeing claims co-opted by institutional actors (Santos et al., 2024). However, in an analysis of a televised reportage from 2023, it was shown that the movement began to be symbolically dismissed (Santos et al., 2024).

Several structural factors can explain why young people are not being heard. Young people are often viewed as future citizens rather than current citizens who can actively contribute to their communities (Campos, 2024; Gale & Edenborough, 2021; C. D. Trott, 2019). Qvortrup (2009) discusses the concept of "becomings" in the context of how children are often perceived and valued primarily for their potential future contributions as adults. Considered a developmental ´phase`, ´youth` is often viewed by adults as problematic – either because young people seem "absent and lazy" or because they appear "excessive and radical" (Campos, 2024, pp. 3–7). Bessant (2021) explains how the contradictory social representation of young people – sometimes portrayed as the "puppets of exploitative adults", sometimes as "heroic and praiseworthy political activists and harbingers of a future" – has historically served the interest of power elites in maintaining a specific social order (2021, p. 18). Looking at institutional political examples, in the study by Thew et al. (2022) on the position of young people in the United Nations Framework Convention on Climate Change (2015-2018), young participants came across restrictive access to negotiation spaces and the overwhelming (adult) expectations placed on youth – some expecting young people to get angry and demand change, whilst others expected young people to listen, learn, and, when asked, offer creative incremental suggestions to improve policies — contributing to feelings of powerlessness and frustration.

Ageist biases and adultist attitudes constrain the political agency of young people, as judgements around age often determine their ability to express desires, explanations, and motivations. Policymakers, families, and teachers often exercise authority in dictating what young people should or should not do politically (Neas et al., 2022; C. Trott et al., 2023). Not only do adultist biases prevail, but the discourse on climate change is traditionally controlled by adults (Wyness et al., 2004). There are observations about how climate protests are increasingly dominated by adults, and some climate groups admit to having a hierarchy where older members set the rules (Fisher & Nasrin, 2021; Malafaia & Meriluoto, 2022).

Trott (2024) discussed different forms of adultist dynamics towards climate action as "hostile adultism" — assuming that young people have limited capabilities compared to adults — and/or "benevolent adultism" — assuming their vulnerability and dependency on adults' protection. A potential consequence is that young people internalize adult-centric narratives, as evidenced by studies on their perception of political agency (Diógenes-Lima et al., 2023; Fine et al., 2007).

In sum, whether seen as radical or naïve, young people are not being taken seriously and are not properly integrated in the decisions that influence their (present and future) lives. As Bowman notes, the "public imagination of the climate crisis tends to restrict young people to having a voice, as opposed to having power; society tends to perceive young people as subjects of political engagement more than agents of

change" (2019, p. 5). Yet, young people are increasingly aware of their position as power-less agents (Kayumova & Tippins, 2021). Arya and Henn (2023) found that young people with fewer resources often attributed limitations on their ability to act on climate problems to factors such as capitalism, colonialism, economic systems, western imperialism, and corporate power. Consequently, these individuals were less inclined to view themselves as orchestrators of their own existence and felt a lack of agency in environmental and political matters (2023, p. 109). Similarly, Taheri Demneh and Zackery (2023) observed that female participants frequently raised concerns about their agency, feeling sidelined, ignored, and silenced within a predominantly patriarchal society (2023, p. 9). Gender and racial issues are particularly relevant to the study of young people's political agency. Multiple studies highlight additional challenges faced by young female activists, particularly in Global South contexts (Kayumova & Tippins, 2021; Rafaely & Barnes, 2020). In short, the complex intersectional inequalities that young people experience often limit (the visibility of) their political agency in public spaces (Mayes & Arya, 2024; Rebelo et al., 2024).

Barriers such as limited knowledge about the political and social nature of climate change, the absence of public spaces where young people's concerns are genuinely heard, and the persistent ageist and adultist biases in public media spaces, can hinder young people's engagement and contribute to their marginalization. These historically unbalanced power dynamics help explain what drives some young people to take action.

How do young people position themselves and take action in the climate change debate?

Recent youth movements have sparked an intergenerational debate around climate change, condemning older generations for failing to secure a sustainable future for younger ones (Liou & Literat, 2020; Walker, 2020). Many youth groups actively challenge the status quo by spotlighting the harm and consequences of neoliberal capitalism and a fossil fuel-dependent society, especially from the viewpoint of the most affected and disadvantaged populations (de Moor et al., 2020; Ferreira da Silva et al., 2025; Pavenstädt & Rödder, 2024). As institutionalized politics has failed to offer spaces for effective contestation and for the inclusion of their voices, young people have embraced alternative forms of political critique that bypass minimum participation age requirements (e.g., voting) and engaged on collective action through methods like civil disobedience (Mattheis, 2022).

Studies on youth political agency highlight diverse expressions of engagement. Pickard (2019) introduced concepts such as "Do-it-Ourselves (DIO)" and Giddens (1991) referred to "lifestyle politics" to analyze new modes of youth engagement with politics, which prioritize nuanced, value-based, and personal approaches over traditional political ideologies. Young people's practices of agency bridge "big-P" politics (formal, institutionalized systems) and "little-P" politics (informal, everyday actions): they actively engaged in both large-scale public events (e.g., protests) and smaller, more private matters (e.g., ethical food consumption), that should be read as co-constitutive of the social practices of everyday life and policy making (Bowman, 2019; Campos, 2024; Skelton, 2010).

Various concepts have been used to describe the multiple everyday actions expressed by young people in the context of climate change. Beckwith et al. (2023) present the idea of "liminal spaces", where young people from the Global South navigate within institutional settings for public participation to act in different agency positions – "volunteer, community builder, or agent of change" (2023, p. 336). Campos (2024) also points out that young people's political practices can exist in a "liminal" space – a space that is often overlooked, socially unrecognized, and even suppressed, but which carries political potency/power[2] (2024, p. 14). Additionally, the concept of "interpretive agency" has been used to refer to young people as intentional and meaningful actors at both micro and macro levels, interpreting information and ideas in creative, unique ways, sometimes incomprehensible to adults (Orman, 2022). Although relatively limited, research in this field draws attention to the phenomenon of non-participation: i.e. often perceived as apolitical or absent, non-participation may stem from a critical stance toward depoliticized institutional politics, exhaustion from activism-related tasks, or perceived insignificant gains for young people (Malafaia & Fernandes-Jesus, 2024).

Many studies focusing on young people and climate change discuss the interplay of individual and collective action. The significance of routine tangible (individual) actions through "everyday activism" lies in their perceived effectiveness, serving as an "antidote to despair" in the face of globally negative images (Ojala, 2007). It lies also on the perceived possibility of exerting influence within young people's circles of influence, such as family and peers (Bentz, 2020; C. Trott, 2021). Collective action creates important spaces for sharing emotions and negative experiences, and performing transformative practices, based on collective care, interpersonal connections, and mutual learning (Bowman & Starzak, 2024; Sitas et al., 2022; Thomas et al., 2022). Moreover, climate activism can act as a buffer to climate anxiety, mitigating depressive symptoms and anxiety disorders (Schwartz et al., 2022). However, it is important to question how the concept of climate anxiety is sometimes used to undermine young people's political agency, reframing their political concerns as mental health issues and thus depoliticizing their actions and claims (Ezell, 2024; Gregersen et al., 2024).

The expressions of political agency reviewed here share a critical reflection on the state of the world around young people and their communities. Beyond exploring and challenging deeply rooted sociopolitical structures and demanding social change, exerting political agency involves expressing opinions or actions and imagining different futures that challenge dominant or commonly held beliefs (Levrini et al., 2021; Mattheis, 2022; Orman, 2022; White et al., 2022). As Moore and Milkoreit (2020) point out, referencing Galafassi et al. (2018),

> *it is through imagination that the future is made present, which allows for the development of a sense of self in relation to that future, creating a present sense of purpose and an ownership of the change. In this sense, imagination is a form of agency, and it enables agents to identify life goals and the actions or strategies that would support the pursuit of these future goals in the present* (Moore & Milkoreit, 2020, p. 7).

However, political agency and the capacity of imagination remains limited by various barriers, primarily related to structural misconceptions and expectations about how young people should behave and mobilize, as well as the danger of internalizing

these misconceptions (Diógenes-Lima et al., 2023; Fine et al., 2007; C. Trott, 2024). Political agency (or its absence) has implications for the construction of alternative climate-dependent futures. In this sense, it is relevant to consider the relationship between political agency and political imagination.

How does political agency relate to young people's political imagination?

Critical social scholarship has pointed out that the hegemony of a neoliberal imaginary weakens citizens' ability to critically understand the social and political contingencies of society, limits their political agency, and inhibits the creation of spaces to imagine different ways of ´being` and ´doing` (Herbert, 2021; Hursh et al., 2015). The perpetuation of the ideas of an insuperable capitalism and that "there is no alternative" (Hall & O'Shea, 2013, p. 22) can limit the imagination of alternative political/social arrangements. Hursh et al. (2015) have discussed how neoliberalism limits approaches to environmental education by constraining the scope of what is considered possible or legitimate within educational practices and policies. They argue that neoliberalism shapes environmental education by constraining critical perspectives, promoting individualistic and consumptive responses to environmental issues, and privileging education that is assessment-driven and credentialed within the "grammar of schooling" (2015, p.309). This often results in a depoliticization of environmental issues, reducing them to personal choices and lifestyle actions while neglecting systemic and structural critiques of capitalism and market-driven policies. These notions are deeply rooted in "social imaginary significations", such as the market, the state, the law (Castoriadis, 2005), and we might add the educational curriculum (Diógenes-Lima et al., 2023).

Recent studies highlight the difficulty that young people face in imagining and projecting themselves into the future (Salmenniemi et al., 2024), or in envisioning futures that are not "catastrophic, capitalist, and socially unjust" (Doyle, 2020, p. 2767), which can deeply jeopardize political action. Research also points to an ambiguity and complexity between dystopian and utopian climate futures. In the discourses of young climate activists, feelings of hope, fear and anger coexist; within dystopian discourses lie moments of utopia based on the hope of a certain (youth) mobilization (Santos et al., 2025). For this reason, young people increasingly need exercising the imagination and interconnected thinking about their future and others (Levrini et al., 2021).

As a shared collective process that has been largely eroded in neoliberal societies, skills for political imagination need to be reclaimed (Eskelinen, 2020; Perheentupa & Porkola, 2025; Salmenniemi et al., 2024). The practice of political imagination may help challenging, undoing and setting up just climate political structures (Machin, 2022) and therefore, politicize the current climate debate[3]. According to Salmenniemi et al. (2024), political imagination is a "transformative and emancipatory practice (...) that is inherently intersubjective, affective and social, materializing in institutions, artefacts and spatial arrangements." (2024, p. 3). Moreover, political imagination involves affirmations of values, moral criteria, and emotional processes (Moore & Milkoreit, 2020; Yusoff & Gabrys, 2011). Norgaard (2018) refers to the need of socio-ecological imagination to address social structures and people-planet

relationships, prompting reflective questions about "cultural, organizational and institutional shifts", "fundamental reorganization of society", "gender and racial inequality", "economic and political instability" and "the future of cities" (2018, p. 172).

Resistance to the predominance of a neoliberal imaginary has been getting more visible and diverse. New youth-led climate groups have been challenging the barriers of the possible in their calls for transformative and radical (political, economic and cultural) change and challenging the temporality of the climate crisis in their discourses by bringing the future into the present in order to politicize the present (Friberg, 2022). Yet, political imagination is not always disruptive or transformative in the terms we view it here. The young climate movement is diverse and there are important differences in how climate groups articulate political imaginaries[4] and visions of the future (Marquardt, 2020; Piispa & Kiilakoski, 2022). Mainstream political imaginaries – strategies based on individual ethics and predominant discourses of sustainable development and ecological modernization – are shared by some groups whereas more radical political imaginaries – resistance to the neoliberal capitalist system and proposals for decentralized democracy – shape other climate groups (Ferreira da Silva et al., 2025). The latter tend to engage in more disruptive actions (protests, blockades, etc.). Conversely, more mainstream groups tend to occupy conventional political spaces (appealing to vote, petitioning, etc.). Groups with more radical imaginaries face greater barriers to integrating into public debate (sometimes due to self-exclusion). Although they are important for democracy in the sense that they revitalize it and allow for conflict (Machin, 2022; McAfee, 2017), transformative imaginaries are often down-played. Groups that are closer to mainstream discourses on climate and the environment are more likely to be co-opted, as their discourses risk being perceived as "adult-like", often silencing the distinct voices of "youth". Once again, the issue persists: how the voices of young people are absorbed without recognition of their unique characteristics.

These two types of climate groups do not capture the full spectrum of youth engagement. There has been a growing wave of supporters of the ecofascism (Benoist et al., 2024), as well as a segment of youth who are resistant – even antagonistic – toward sustainable behaviors (Urberg & Öhman, 2024). More research should pay attention to these aspects. As suggested by Urberg and Öhman (2024), youth resistance to sustainable development can stem from defending economic interests or fearing the loss of cultural and social capital. Resistance also intensifies in reaction to how sustainability is framed and practiced, with rural young men often targeting the "green" behaviors of urban middle-class women. This highlights how the debate centers on the political and discursive dimensions of climate change: the way problems are framed and discussed can shape and sometimes constrain what actions are possible. At the same time, it shows how the climate debate includes identities and social relations that are discursively constructed over time and deeply rooted (e.g., gender, resource management). Creating spaces for different imaginaries to respectfully and dialogically confront one another may offer a way to promote negotiation of positions and to amplify different youth voices as political agents (Doyle, 2020; Laclau & Mouffe, 1985; Mouffe, 2000).

In sum, young people face significant challenges in envisioning alternative climate futures due to intersecting inequalities, power imbalances, and the adult-dominated discourse on climate change. While often depicted either as powerless victims or as heroic activists, their political agency remains constrained by ageist and adultist biases, limited opportunities for action in political and educational settings, and a lack of accessible explanations about climate change's political dimensions. Despite the persistence of a neoliberal imaginary, resistance is now more broadly visible and diverse, highlighting the need to recognize and amplify young people's voices in ways that reflect their diverse experiences and perspectives.

Methodology

To understand how participatory methodologies can foster young people's imagination and political agency in relation to climate change, we have carried out a non-systematic literature review to map out existing research on participatory methodologies. We critically discuss whether and how the political nature of climate change can be promoted through such designs.

Search process

The search was conducted in the Scopus and Web of Science databases over several months between 2023 and 2024 (Appendix 1). More precisely, the search string included the following keywords and combinations: ("climate change" or "climate" or "environment*"); "political agency"; ("youth" or "young"); "imagin*"; "participat*"; ("non-activis*" or "non-partic*" or "standy"); ("critical literac*" or "political literac*") and "communi*". The database searches show results starting in 2015, with a sharp increase in publications from 2021. Before 2015, most works focused on literacy, sustainability, education, or other topics not directly tied to the environment or climate, agency or imagination. During the search process, we focused exclusively on peer-reviewed journal articles. Our search reflects a predominance of work produced primarily in the United Kingdom, the United States, and other countries of the Global North, mostly in the fields of Social Sciences, Arts and Humanities, and Psychology (Scopus categories), as well as Environmental Studies and Regional and Urban Planning (Web of Science categories). Most of the articles included in the literature review demonstrate a strong interdisciplinary orientation, connecting fields such as education, environmental sustainability, communication, psychology, urban planning and futures studies, and youth studies (Appendix 1).

Analtyical approach

Given the multiple moments of research and its non-systematic character, the analytical process involved a continuous work of summarizing the types of creative methodologies employed in the studies and the theoretical frameworks that informed those choices. The main concern was not to highlight the outcomes of the activities (the participants collective visions), but rather to focus on the creative process – i.e.

on how the political dimension of climate change and environmental issues emerged (whether the activities generated discussion among participants, what kinds of topics were introduced by researchers and participants, how political perspectives were stimulated, etc.).

Thus, this paper prioritizes works that address the political nature of climate change. Exploring the political nature of climate change involves questioning *norms* and *expectations* – dominant and entrenched political imaginaries – to create alternative possibilities for thought and action. It requires consideration of political dynamics (resource management, market organization, funding allocation, intergovernmental agreements, justice, accountability, security, etc.); political actors/institutions that play decisive roles in these dynamics (e.g., governments, political parties, non-governmental organizations, activists, citizens, etc.); the power differentials involved; and the cultural, communicative, ideological, moral, ethical, and relational (e.g., gender and age) contexts shaping human interactions.

Positionality statement

The authors have extensive familiarity with youth political participation, climate change communication, and field experience in participatory methodologies with young people. They take a clear stance in support of climate justice and youth rights. During this review, they were also involved in research which involved using participatory methodologies to engage young people in addressing climate issues, within the framework of a project focused on youth political imaginaries (JustFutures, 2020). Therefore, the critical approach to the literature review was undertaken from an insider's perspective.

Despite the comprehensive nature of our analysis, several limitations remain. Our reliance on academic English-language articles may exclude valuable non-academic sources and contributions in other languages, particularly those reflecting grassroots, Indigenous, and local knowledge systems. The authors of the paper acknowledge that its connection to Global North countries and a Eurocentric perspective may introduce bias in the research process, influencing both search criteria and methodological interpretations. Still, as it will be shown, the studies included in this review also includes some research from Global South countries with low- and middle-income contexts (e.g., Haiti, Algeria, South Africa, Chile, Iran, and Vietnam; see Appendix 1).

Findings: How participatory methodologies may foster the political imagination of alternative climate futures among young people

This section presents the findings of our literature review. It is organized as follows: first, we outline the value of participatory methodologies with young people. Next, we highlight key characteristics emerging from the studies reviewed, focusing on how these features shape participatory approaches. Finally, we discuss two creative approaches: visualization and speculation.

Participatory methodologies involving young people allow for the creation of exploratory spaces and activities aimed at nurturing young people's critical thinking

skills, expanding future possibilities, and enabling them to position themselves in different time frames and on different political topics. Studies have emerged that promote critical reflection on young people's lives and future literacies (Finnegan, 2022; V. Jones & Podpadec, 2023), fostering reflections on the social and political dimensions of climate change.

Participatory methodologies with young people can be applied within the scope of Youth Participatory Action Research (yPAR) projects; however, their applicability extends beyond this context. Participatory methodologies with young people foster the co-creation of practical, context-specific knowledge through active engagement and partnership with youth participants (Shamrova & Cummings, 2017). Projects using participatory methodologies are often focused on the research *process*, rather than on the research *output*. The continuous process enables diverse modes of negotiation among participants, encourages new perspectives on climate change, and facilitates discussions on what can be changed. Participatory methodologies are especially relevant to work with marginalized youth communities, aiming to amplify their voices and build their capacities for broader civic and political engagement (L. Jones et al., 2024; Lee & Schoonover, 2020). Therefore, the political nature of such an approach – challenging the distribution of power on knowledge generation – is a key starting point for positioning young people as agents of change in the broader climate debate.

Depending on the degree of involvement, young people can take on a more or less central role in the research: on roles as active collaborators, co-researchers, and/or co-authors (Kayumova & Tippins, 2021; Mayes & Arya, 2024; White et al., 2022); they can contribute to organizing, mediating, and evaluating participatory activities and their impacts (Marks et al., 2023). Participatory methodologies can promote the development of leadership skills and responsibilities (Shamrova & Cummings, 2017; Taheri Demneh & Zackery, 2023), thus moving beyond traditional depictions of youth as passive “victims” of social issues like climate change (Mayes & Arya, 2024). By considering them as agents in the research process, participatory methodologies can empower young people to identify pressing issues and give them the confidence to advocate for themselves and their communities (Brydon-Miller et al., 2003; Fine et al., 2007; Gale & Edenborough, 2021).

Simultaneously, methodological designs reviewed here seek to engage with the subjective experiences of young people: integrating their routines, discourses, and opinions is essential for recognizing their knowledge and interpretations of climate change (Bowman & Germaine, 2022). For instance, as Malafaia & Fernandes-Jesus (2024) note, asking young people how they experience and make sense of issues such as climate activism can be an important starting point, and genuine listening requires accepting that youth political agency may be expressed differently from adult norms.

As political agency (and political imagination) are inherently collective practices, participatory methodologies have been used to incorporate the communities in which young people live, emphasizing collective dynamics at various scales – from neighborhood to national contexts (Kayumova & Tippins, 2021). This dialogue is particularly significant in broadening political imaginaries about climate change, modes of climate activism, and confronting the representations of climate change portrayed by the media, schools, and other institutions. This dialogue emerges in the reviewed studies,

particularly with older individuals (Hamamouche et al., 2024; L. Jones et al., 2024; MacDonald et al., 2015); with other young people who experience the frontline effects of climate change (Heinemeyer et al., 2024); and with youth actively engaged in climate-related issues (Marks et al., 2023; Sitas et al., 2022). Exposure to other realities is important in bringing young people with ways of ´being` and ´doing` that can generate novelty and help imagine different paths. This positioning, even when imagined or speculated through creative activities, entails a sense of relational and collective responsibility regarding human actions and the social struggles that drive the development of political agency (Bentz, 2020; Kayumova & Tippins, 2021). Heinemeyer et al. (2024) demonstrate how contact with young people who experience the frontline effects of climate change can foster a critical perspective on UK young people about their own locality – one that may not have existed *a priori*. Besides, dialogic activities lie in enhancing participants' ability to listen to and understand one another, rather than achieving a specific solution or decision. They are relevant in focusing on the collective expression process rather than on the ´product` (Li et al., 2022; Marks et al., 2023).

Thinking about the research sites chosen to develop participatory designs is important, as they can constrain or promote agency and imagination. Literature shows that non-school environments are often preferred to avoid institutional spaces that can restrict certain behaviors (Lee & Schoonover, 2020; Shamrova & Cummings, 2017) and tend to perpetuate a depoliticized environmental discourse (Neas, 2023; C. Trott, 2021). While some activities do take place in schools, universities, and institutes (Finnegan, 2022; Marks et al., 2023; Salmenniemi et al., 2024), many occur within local organizations, charities, art galleries and community groups (Doyle, 2020; V. Jones & Podpadec, 2023; Napawan et al., 2017; Pollio et al., 2021). The latter settings provide a closer connection to young people´s lived experiences and distance the activities from institutions that reproduce global knowledge, such as schools and universities (Diógenes-Lima et al., 2023).

In most of the reviewed studies, there is a strong presence of artistic, and future-oriented activities that can foster imagination about climate futures. The integration of artistic activities into climate change education has been highlighted as important in challenging positions of authority by allowing for multiple perspectives and types of knowledge, such as ethical, emotional, and aesthetic (Bentz, 2020). Future-oriented activities, in turn, encourage participants to apply their knowledge, position themselves into the process, explore their mental frameworks, and strengthen relationships with others to implement new knowledge in the real world (V. Jones & Podpadec, 2023; Levrini et al., 2021).

Next, we will discuss two creative approaches that combine the above-highlighted characteristics: visualization and speculation. In the present literature review, visual and speculative dimensions stood out, serving as a supporting framework for other techniques such as photovoice, storytelling, theater, etc. On the one hand, visualization has been strongly linked to the ways young people express themselves in the streets, through protests and demonstrations (placards, social media posts, artistic expression). Visual methods are not *per se* participatory methodologies but their combination with participatory activities can be very useful to enhance “understanding of public spheres,

political practices, and modes of conceiving the political" (Malafaia & Fernandes-Jesus, 2024). In addition, visual arts activities are generally more appealing for young people (Napawan et al., 2017) as they extend beyond traditional text-based exercises and promote multimodality, fostering greater creativity in communicating about climate change (Bentz, 2020; McGimpsey et al., 2023; Sanz & Rodriguez-Labajos, 2021). On the other hand, imaginative work is closely tied to the speculative realm, opening possibilities through "what if?" scenarios (C. D. Trott et al., 2020). This enables space for reflection and imaginative thinking, conceiving of the future or bringing alternatives into the present (e.g., through gamification) and even reinterpreting the past.

Visualization

Visual artifacts can be used as stimuli to provoke discussion, as well as to mediate/organize discussions, with Mindmaps (Doyle, 2020; Salmenniemi et al., 2024) or Storyboards (Pollio et al., 2021), or collective illustrations (Marks et al., 2022), for instance. Photovoice is frequently employed to prompt imagination and reflect on desired futures (Lam & Trott, 2024; Napawan et al., 2017; C. Trott et al., 2023). In the *Science, Camera, Action!* program (C. D. Trott et al., 2020), children were asked to use the digital cameras provided by the program to capture images that expressed their thoughts and feelings on topics related to sustainability. The activity culminated in the development of collaborative projects for their communities. This can promote more sustained interest and motivation. In the yPAR study *INSECURE,* by Jones et al. (2024), film was used as a storytelling vehicle through which young people could narrate and express their personal and community-level impacts of climate change in one of the world's most affected coastal regions (Withernsea, UK). Their poems, photographs, and videos played a crucial role in raising awareness and mobilizing action around the issue of coastal erosion – an area where science education alone has struggled to achieve similar engagement. A workshop organized by Marks et al. (2022), describes a centered on eco-emotions and climate change-related feelings also with a strong emphasis on visual and storytelling elements. A video served as a prompt to spark discussion about envisioned futures and, throughout the process, a professional illustrator collaborated with participants, creating a speculative storyboard as they shared and interpreted their visions.

Participatory video is another commonly recruited method, which involves a process of collecting testimonies from different community members (e.g., policy makers, Napawan et al. 2017), and allows for collective and intergenerational dialogue (Lam & Trott, 2024). MacDonald (2015) employed participatory video to motivate the engagement of Inuit youth (a circumpolar Indigenous population from northern Canada) in planning and decision-making for climate change adaptation. The involvement of youth in community decision-making, alongside an intergenerational dialogue (particularly with elders), served as a "protective factor" in relation to the stress youth experience in response to climate change challenges (2015, p. 487). In another study, participatory video was used as a method to explore the uses of public structures related to water use in a North African city (Algeria) (Hamamouche et al., 2024). Climate change has been changing access to water in that region. Therefore, as part

of a community effort to adapt to problem, it is very important that young people be involved in the organization of community water infrastructures, guaranteeing the sustainability of people's access to water. Participatory video was used as a way of dialoguing with older generations who have their own practical knowledge ("traditional ecological knowledge", 2024, p. 491) of infrastructure maintenance. Despite the limitations of the participants' scientific knowledge, video enabled a collective understanding of how young people interpret the uses of those infrastructures and how they imagine future alternatives for dealing with them.

Speculation

Storytelling serves as a rich tool to speculate about what the future might be. Digital storytelling, alongside photovoice and *´hashtagging`*, as described by Napawan et al. (2017), exemplifies a strategy that incorporates a speculative approach to tackle community issues. In their study, young people participated in digital storytelling by creating social media posts that pose "what if?" questions, in images or text, about potential new dynamics in their urban environments and depict future scenarios. Looking also at the community level, storytelling was employed in Pereira et al. 's (2018) work to inspire the envisioning of new futures for the Southern African region. The process began with the concept of "seeds of a good Anthropocene," referring to innovative projects already being implemented in Southern Africa. Young adult participants were tasked with constructing future "scenario frameworks" based on the principles of these existing projects. They had to incorporate elements such as theater, props, movement, music, and costumes to present their visions.

The participatory project *Climate Change and Me* (Rousell et al., 2017), conducted with a young co-researcher on a digital platform, utilized speculative fiction to explore children and young people's connections to climate change, where "children develop mutant forces and bodily augmentations that enable them to resist social and environmental injustices" (2017, p. 2). As a digital storytelling exercise, Finnegan's (2022) work with letters from the future (2050) provided an opportunity to explore young people's perspectives and emotions regarding future climate scenarios, revealing a shift from predominantly negative emotions to a more balanced range that includes acceptance, curiosity, and hope. More recently, work by Heinemeyer et al. (2024) describes the use of participatory storytelling as a central methodology in the *Suitcase Stories* project, which aimed to engage young people in understanding climate adaptation through mutual learning. The dialogue between a climate and feminist journalist and young people from Nigeria allowed them to better understand the impact of climate change in frontline communities. The participants had, then, to search for climate injustice stories around the world and, finally, construct and perform a storytelling piece about what climate adaptation can be like.

Staging activities are frequently used with speculation purposes. Embodied experiences are particularly useful in the sense that they provide young people a space to get in touch with (and humanize) possible forms of climate action, providing them with an opportunity to position themselves as empowered agents (Bentz, 2020;

Galafassi et al., 2018; McGimpsey et al., 2023). To explore High-End Climate Change (HECC) futures, participatory and reflective art-based exercises were informed by science-based workshops in the work of Galafassi et al. (2018). These activities invited participants to interact with art installations and performances, such as *WE ARE KNOT*, which began with actors and participants tangled in a complex knot of ropes. As the performance unfolded, participants collaboratively self-organized to untangle the knot. The staging of "council-of-all-being-inspired drama", developed by Taheri Demneh and Zackery (2023), allowed for a unique discursive apparatus to re-assess the past and imagine alternative futures and make them less abstract and more concrete. Young people took part in the artistic process from the beginning until the dissemination, and it provided participants with a societal space of freedom to re-imagine their relationship with the world. The process sought to foster four dynamics of agency based on Holloway et al. (2019): capacity, subjectivity, spatiality and temporality.

Arts and crafts activities are also employed as speculative prompts. In the Afrofuturist work of Holbert et al. (2020) crafted cloaks and objects served as repositories of practical and local knowledge from the families of young participants – rooted in the tradition of sewing – while fostering the imagination of fictional alternative futures (the Wakanda Project) and promoting the development of new epistemologies regarding climate change. In the work of Jones and Podpadec (2023), sewing workshops and patches were used to reflect on the political dynamics of fast fashion and in envisioning a sustainable fashion industry for the future. The design of the workshops was informed by a backcasting methodology and guided by questions related to who bears the greatest responsibility for climate change and who has the most significant role in mitigating it.

Writing techniques are also widely used in, for instance, crafting narratives and manifestos. The arts-based workshops developed by Salmenniemi et al. (2024) about utopian pedagogy and political imagination involved speculating about specific objects surrounding participants' outside environment, considering the ideologies and worldviews behind these objects, and collectively imagining where these objects might be in five years. Using maps and key themes (such as climate, work, mental health, and livelihood), participants were then instigated to write a collective utopian manifesto. In the work of Sitas et al. (2022), a workbook was co-designed and then given to young people so that they could write down their reflections on the dynamics that had changed in their urban environments. The workbook called for reflection on issues relevant to that region (Cape Town) and accompanied the young people during the immersive and art-based workshop. The long workshop helped young people develop "a stronger sense of community responsibility and agency" (2022, p. 5) while engaging with issues such as plastic overuse, beach clean-ups, the personal and collective impacts of climate change, inter- and intra-generational dialogue on urban change, future imagination exercises, and the use of art and green spaces in the city.

Gamification is another forward-thinking and speculative strategy used by scholars. In building future scenarios for Antarctica gateway cities, Pollio et al. (2021) found that the young participants considered the possibility that the game itself could be

used for political engagement with the real world. Rather than making the game a purely playful experience, young participants proposed connecting the scenario to real-world events and creating practical opportunities for engagement; for instance, "integrating real climate change news to prompt political action" or "including a feature to lobby local politicians for climate change action" (2021, p. 9).

Doyle's work (2020) on the *Future Coast Youth* project is a key reference for utilizing speculative fiction and participatory play techniques to explore young people's multidimensional thinking about climate futures. The activity was based on a prior alternative reality game called *FutureCoast* (2014), where players contributed to a shared story by sending voicemails to and from the future (2020 - 2065). The future voicemails were translated into physical objects called "chronofacts" and these messages were activated as young participants were discovering them. Through scaffolded discussions and mind map activities, participants developed a speculative fiction context, relying on descriptions of different futures, and elaborating new voicemails from the future. During this process, students discussed "the causes, solutions, responsibilities, and challenges of addressing climate change, and how they think climate change is being communicated" (2020, p. 2759). All participants created a multidimensional communication product of their choice and presented their work as "youth climate conference delegates from the future" (2020, p. 2763).

Doyle's work is particularly relevant for several reasons: the gamification and speculative process in this project encouraged collective participation, critical thinking, and joy; creating their own products helped young people foster a sense of effectiveness; the role-playing during the presentation had positive effects on students' confidence (while presenting to an audience of adults caused discomfort). More notably, Doyle's study stands out for its aim to foster politicization and reflect on conflicting views within the climate debate. Doyle illustrates this by using three scripted characters (climate campaigner, climate scientist and climate skeptic) to present diverse cognitive, emotional, and behavioral perspectives, showing diverse and conflicting ideological viewpoints that shape perceptions of climate change. According to Chantal Mouffe (2000), democracy thrives on the presence of agonistic (rather than antagonistic) viewpoints, where ´opponents` are seen as legitimate adversaries, not as enemies to be destroyed. Doyle´s approach thus encourages dialogue and negotiation among students about social and economic dimensions, while enriching their perspectives by juxtaposing conflicting social and political views, and incorporating humor, apocalyptic imagery and positive approaches.

Discussion

In this article, we emphasized the inherently political nature of climate change and explored how it can be reflected through participatory methodologies with young people to potentially strengthen their agency and political imagination. All the studies listed here have reported ways to encourage young people to think about their political imaginaries on climate change, especially their role as agents of change. Despite this, there are works that come closer to the conceptions we have presented here about political imagination (cf. Doyle, 2020; Salmenniemi et al., 2024).

To effectively foster young people's political imagination, participatory methodologies must address several critical dimensions. First, these methodologies should incorporate the political (plural) practices and linguistic forms already employed by young people, encompassing both their visible and less visible aspects. Second, they should incorporate local and community knowledge regarding climate change-related challenges. Third, it is essential to account both for the rational and emotional interpretations – collective and personal – that young people make of the phenomenon of (and public debate on) climate change (Urberg & Öhman, 2024). Fourth, fostering critical thinking, scientific and political literacy (mainly *curiosity*), about social and political structures, as well as the critical issues arising from them, is crucial to ensuring that climate change remains relevant and meaningful to youth (L. Jones et al., 2024).

Additionally, these methodologies should promote hopeful and just perspectives about the future while enabling young people to take ownership and demonstrate leadership throughout and beyond participatory processes, including the ideas and projects they may present. They should also integrate non-dominant forms of knowledge about climate change, thereby encouraging the formulation of novel epistemologies. Further, creating safe and informal spaces for experimentation: play and "transgression" is vital (Perheentupa & Porkola, 2025). These spaces should stimulate engagement with external entities and facilitate the integration of such interactions into participatory settings. Finally, these approaches should prioritize fostering dialogue with political, educational, and other institutional actors across various scales of action to ensure that the outcomes of participatory work can be extrapolated and applied more broadly.

Although the studies reported ways to encourage young people to think about their political agency and collective political visions on climate change, the use of participatory methodologies does not necessarily translate into greater agency or imagination. It is important to consider the various barriers to this type of work. First, it is widely recognized that research teams encounter numerous challenges in implementing these designs, such as securing time and funding – an essential factor for ensuring sustained investment and the meaningful involvement of young participants from the project's inception (besides, we see how different social and political contexts require different types of resources, whether it's training adults or providing safe spaces for participants) (Shamrova & Cummings, 2017). Second, participants' involvement in the research process remains a central concern (Fine et al., 2007; Shamrova & Cummings, 2017). Based on the reviewed articles, critical evaluation should focus on both the degree of young people's participation and the power relations between them and researchers. Without such attention, research risks reproducing existing inequalities (Holloway et al., 2019; Mayes & Arya, 2024). To avoid this, studies with young people should be guided by principles of climate justice and reflexivity (Fernandes-Jesus et al., 2025). Third, we argue that critical evaluation should focus also on the nature and purpose of the activities co-designed to engage them. It is essential to consider how the methodologies´ structure enables political discussion. Working with young people on the political aspects of their everyday lives should include exploring how they are positioned – often unfavorably – within public debates.

In this article, we explored how research can move towards (re)positioning young people in the public debate on climate change by using participatory research designs to foster political imagination and political agency. The literature shows how adultist biases and entrenched economic views persist, limiting the recognition of young people as political agents and, consequently, their integration into climate decision-making. In the last few years, youth climate groups have shed light on the deeply unequal power dynamics in our society, including their social position as powerless agents. Still, barriers remain to how these groups are recognised as 'legitimate' and there have been increasing legal limitations on pursuing public protests (e.g., L. Jones et al., 2024). Despite recent research showing how climate activism has effective positive impacts on public opinion and pro-climate voting behaviour (Brehm & Gruhl, 2024; Fabel et al., 2024; Ostarek et al., 2024), barriers to imagining and performing alternative climate futures remain.

Participatory work on climate change must therefore be able to integrate different young voices and ways of thinking about the problem. In this respect, the field of climate education/environmental education programs has increasingly invested in the issue of climate justice and the possibility of integration of activism-generated knowledge (Bowman & Germaine, 2022; Mayes, 2023; McGimpsey et al., 2023; McGregor & Christie, 2021; White et al., 2022), thus challenging some of the limitations of current climate education (Diógenes-Lima et al., 2023; Hursh et al., 2015; Rousell & Cutter-Mackenzie-Knowles, 2020; C. D. Trott, 2019).

In a critical review of climate education, McGimpsey et al. (2023) call for the diversification of knowledge such as non-western and indigenous knowledge as a form of climate justice education. McGregor and Christie (2021) propose starting from the asymmetries in the distribution of blame, vulnerability, and agency in climate change. They invited activists, advocacy workers, and educators to consider how climate justice intersects with social power dynamics, including race, class, gender, and generational divides, across local, national, and global contexts (pp. 18–19). They note that teachers often hesitate to incorporate activist-generated knowledge into formal curricula, expressing concerns about its perceived ideological bias. In contrast, Bowman and Germaine (2022) advocate argue that climate strikes function as imaginative educational spaces where young people cultivate skills in participation, literacy, and critical thinking outside institutional boundaries. Finally, White et al. (2022) brought together teachers and Fridays for Future activists to encourage educators to "dare to think" differently about their approaches to teaching.

The role of participatory methodologies in fostering a more horizontal relationship between young people, adults and decision-makers within the broader climate change debate remains an unresolved question. Participatory methodologies have the potential to enhance young people's voice. However, it is important to recognize that 'voice' is often manipulated, co-opted, or recontextualized in media (Santos et al., 2024), institutional (Thew et al., 2022), or even in research settings (Holloway et al., 2019; Mayes & Arya, 2024). If we consider the climate debate as predominantly adult-centered, characterized by dominant Western and techno-scientific epistemologies, participatory designs can (only) function as spaces of resistance and community capacity building; if we consider the diversity of political expressions (as previously discussed), the emotional

and cognitive dimensions about engaging in collective actions, then these spaces have the potential to positively cultivate new modes of thinking and ´watering` the imaginative seeds that may later emerge in young people's spheres of influence – e.g. organizing and mobilizing within their communities, schools, recreational spaces, and beyond – as effective social change.

Notes

[1] Sunrise Movement (2017), Youth Vs Apocalypse (2019), Fridays for Future (2019), Earth Uprising (2019), Jovenes por el Clima! (Youth for Climate, 2019), Re-Earth Initiative (2020), End Fossil: Occupy! (2022), Letzte Generation (2021), Youth4Climate (2022), Climate Cardinals (2024), etc.

[2] Campos (2024) explains that the choice of the word "potency" refers "both to vitality and strength, but also to the idea of something that is in a state of suspension ("in potency"), contained and ready to express itself with all its might under the right circumstances." (2024, p.14).

[3] Politicizing the climate change debate involves recognizing the power and value-related dynamics that make it a profoundly political issue. It means creating space for ideological differences, dissent and contestation about how societies should address climate change, and spaces for different future-visions (Pepermans & Maeseele, 2016).

[4] Political imaginaries are normative constructions concerning the political organization of our collective life—what we can (or cannot) do politically, who has (or does not have) the right to participate, and who holds (or does not hold) the power and authority to make decisions and determine which paths to follow. These imaginaries are embedded in how we relate to one another and in our discourses (Ferreira da Silva et al., 2025).

Acknowledgments

The authors would like to express their gratitude to the four reviewers for their invaluable contributions to this work.

Author contributions

CRediT: Daniela Ferreira da Silva: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Writing – original draft, Writing – review & editing; Maria Fernandes-Jesus: Conceptualization, Methodology, Project administration, Writing – review & editing; Anabela Carvalho: Conceptualization, Methodology, Project administration, Writing – review & editing.

Declaration of interest statement

The authors report there are no competing interests to declare.

Funding

This work was supported by the Fundação para a Ciência e a Tecnologia (FCT) through the following grants: The research project JUSTFUTURES – Climate Futures and Just Transformations: Young People's Narratives and Political Imaginaries [PTDC/COM-OUT/7669/2020]; the research project Reimagining Political Agency: The Voice(s) of Young People in the Climate Change Debate [2024.02918.BD]; and the Centre for Research in Anthropology [UID/04038].

Notes on contributors

Daniela Ferreira da Silva (MA, university of Porto) is a sociologist and a PhD student in Communication Sciences at the university of Minho. She is a member of the Centre for Social Studies (ICS-uMinho) and the Centre for Research in Anthropology (CRIA-uMinho). Her research experience includes studies of youth activism, forms of political socialization, climate change communication, and qualitative creative methodologies. She has contributed to funded research projects, including "ArtCitizenship" (CICS.NOVA, 2021-2022), "JustFutures" (university of Minho, 2022-2025) and "Reimagining Political Agency: The Voice(s) of Young People in the Climate Change Debate" (university of Minho, 2024-2026).

Maria Fernandes-Jesus (PhD, university of Porto) is an Assistant Professor at the School of Psychology, university of Sussex, united Kingdom. Her research explores topics related to cli mate justice, collective action, political agency, migrant justice, youth participation and political engagement with climate change. Her ongoing funded research projects focus on building partnerships for climate justice using participatory methods ("Partnerships for Climate Justice: Amplifying the Voices of Marginalised Youth for Sustained Climate Activism and Societal Transformation") and examining agency in climate-linked migration ("Agency in climate migra tion: Intersectional experiences shaping migratory agency and political power").

Anabela Carvalho (PhD, university College London) is Associate Professor (with Habilitation) at the Department of Communication Sciences of the university of Minho, Portugal. She has worked extensively at the intersection of climate change, communication and democracy focusing on discourses on climate change in various countries, citizens' engagement with environmental issues, and political imaginaries on climate change. Her publications include Citizen Voices: Enacting Public Participation in Science and Environment Communication (with L. Phillips and J. Doyle, 2012); Climate Change Politics: Communication and Public Engagement (with T.R. Peterson, 2012); and Environmental Communication (handbook, with T.R.Peterson, 2024).

ORCID

Daniela Ferreira da Silva http://orcid.org/0000-0002-1230-5667
Maria Fernandes-Jesus http://orcid.org/0000-0002-8868-1968
Anabela Carvalho http://orcid.org/0000-0002-7727-4187

References

Arya, D., and M. Henn. 2023. "The Impact of Economic Inequality and Educational Background in Shaping How Non-Activist "Standby" Youth in London Experience Environmental Politics." Educational Review 75 (1): 93–114. Scopus. https://doi.org/10.1080/00131911.2021.2007051.

Beckwith, L., M. B. Smith, O. Hensengerth, H. Nguyen, C. Greru, S. Warrington, T. Nguyen, et al. 2023. "Youth Participation in Environmental Action in Vietnam: Learning Citizenship in Liminal Spaces." The Geographical Journal 189 (2): 329–341. https://doi.org/10.1111/geoj.12479.

Benoist, L., J. Turner, and D. Bailey. 2024. "Ecofascism in the Shadow of 'Patriotic Ecology': Nativism, Economic Greenwashing, and the Evolution of Far-Right Political Ecology in France." Politics 1-20. https://doi.org/10.1177/02633957241273649.

Bentz, J. 2020. "Learning about Climate Change in, with and through Art." Climatic Change 162 (3): 1595–1612. https://doi.org/10.1007/s10584-020-02804-4.

Bergman, Z., and R. Ossewaarde. 2020. "Youth Climate Activists Meet Environmental Governance: Ageist Depictions of the FFF Movement and Greta Thunberg in German Newspaper Coverage." Journal of Multicultural Discourses 15 (3): 267–290. https://doi.org/10.1080/17447143.2020.17 45211.

Bessant, J. 2021. Making-Up People: Youth, Truth and Politics. Abingdon, uK: Routledge.

Bowman, B. 2019. "Imagining Future Worlds Alongside Young Climate Activists: A New Framework for Research." Fennia - International Journal of Geography 197 (2): Article 295–305. https://doi. org/10.11143/fennia.85151.

Bowman, B., and C. Germaine. 2022. "Sustaining the Old World, or Imagining a New One? The Transformative Literacies of the Climate Strikes." Australian Journal of Environmental Education 38 (1): 70–84. https://doi.org/10.1017/aee.2022.3.

Bowman, B., and M. Starzak. 2024. "The Precarity of Hope at the End of the World: Young Climate Activism in Search of a Future." In C. Erdal & J. Kennelly (Eds.), Handbook of Youth Activism. Berlin: De Gruyter. https://doi.org/10.17605/OSF.IO/5DGPT.

Brehm, J., and H. Gruhl. 2024. "Increase in Concerns about Climate Change following Climate Strikes and Civil Disobedience in Germany." Nature Communications 15 (1): 2916. https://doi. org/10.1038/s41467-024-46477-4.

Brydon-Miller, M., D. Greenwood, and P. Maguire. 2003. "Why Action Research?" Action Research 1 (1): 9–28. https://doi.org/10.1177/14767503030011002.

Cahill, H., and B. Dadvand. 2018. "Re-Conceptualising Youth Participation: A Framework to Inform Action." Children and Youth Services Review 95: 243–253. https://doi.org/10.1016/j. childyouth.2018.11.001.

Campos, R. 2024. "Pensar a Juventude Enquanto Sujeito Político: Liminaridade e Agência Política." Análise Social, 59 (253) 253. https://doi.org/10.31447/202352.

Care About Climate. 2024. "NDC Equity Tracker: Towards Inclusive Climate Commitments: Gender and Youth at the Forefront: Annual Report 2024." https://www.ndcequitytracker.org/

Castoriadis, C. 2005. The Imaginary Institution of Society (Reprint). Cambridge: Polity Press.

Corner, A., O. Roberts, S. Chiari, S. Völler, E. S. Mayrhuber, S. Mandl, and K. Monson. 2015. "How Do Young People Engage with Climate Change? The Role of Knowledge, Values, Message Framing, and Trusted Communicators." WIREs Climate Change 6 (5): 523–534. https://doi. org/10.1002/wcc.353.

de Moor, J. 2022. "Postapocalyptic Narratives in Climate Activism: Their Place and Impact in Five European Cities." Environmental Politics 31 (6): 927–948. https://doi.org/10.1080/096440 16.2021.1959123.

de Moor, Joost, Michiel De Vydt, Katrin uba, and Mattias Wahlström. 2021. "New Kids on the Block: Taking Stock of the Recent Cycle of Climate Activism." Social Movement Studies 20 (5): 619–625. https://doi.org/10.1080/14742837.2020.1836617.

Diógenes-Lima, J., S. Pinheiro, J. Cruz, and C. Malafaia. 2023. "If not even the school listens to us…": Echos of climate justice on the ground. "JSSE - Journal of Social Science Education." 22(4), Article 4. https://doi.org/10.11576/jsse-6346.

Doyle, J. 2020. "Creative Communication Approaches to Youth Climate Engagement: using Speculative Fiction and Participatory Play to Facilitate Young People's Multidimensional Engagement with Climate Change." International Journal of Communication 14 (2020): 2749 2772. https://ijoc.org/index.php/ijoc/article/view/14003.

Eskelinen, T. (Ed.). 2020. The Revival of Political Imagination: Utopia as Methodology. London: Zed Books Ltd. https://doi.org/10.5040/9781350225633.

Ezell, J. 2024. "How Climate Anxiety Became a Convenient Foil for the Right." TIME. https://time. com/7093781/youth-climate-anxiety-weaponization-essay/

Fabel, M., M. Flückiger, M. Ludwig, H. Rainer, M. Waldinger, and S. Wichert. 2025. "The Relationship between the Youth-Led Fridays for Future Climate Movement and Voting, Politician and Media Behaviour in Germany." Nature Human Behaviour 9 (3): 481–495. https://doi.org/10.1038/ s41562-024-02075-4.

Fernandes-Jesus, M., C. D. Trott, G. Barnwell, and B. Barnes. 2025. "Toward a Critical Psychology of Climate Justice." International Perspectives in Psychology 14 (3): 162–173. https://doi. org/10.1027/2157-3891/a000130.

Ferreira da Silva, D., A. Carvalho, and M. Fernandes-Jesus. 2025. "Political Imaginaries in the Climate Movement: Youth-Led Groups Constructing Plural Views of the Future." Sociological Research Online 30 (2): 416–433. https://doi.org/10.1177/13607804241282942. 22

Fine, M., M. E. Torre, A. Burns, and Y. A. Payne. 2007. "Youth Research/Participatory Methods for Reform." In D. Thiessen & A. Cook-Sather (Eds.), International Handbook of Student Experience in Elementary and Secondary School (pp. 805–828). Dordrecht: Springer Netherlands. https:// doi.org/10.1007/1-4020-3367-2_32.

Finnegan, W. 2023. "It's Beautiful, Living without Fear That the World Will End Soon'–Digital Storytelling, Climate Futures, and Young People in the UK and Ireland." Children's Geographies 21 (5): 898–913. https://doi.org/10.1080/14733285.2022.2153329.

Fisher, D. R., and S. Nasrin. 2021. "Shifting Coalitions within the Youth Climate Movement in the uS." Politics and Governance 9 (2): 112–123. https://doi.org/10.17645/pag.v9i2.3801.

Friberg, A. 2022. "On the Need for (Con) Temporary utopias: Temporal Reflections on the Climate Rhetoric of Environmental Youth Movements." Time & Society 31 (1): 48–68. https://doi.org/1 0.1177/0961463X21998845.

Galafassi, D., J. D. Tàbara, and M. Heras. 2018. "Restoring Our Senses, Restoring the Earth. Fostering Imaginative Capacities through the Arts for Envisioning Climate Transformations." Elementa: Science of the Anthropocene 6: 69. https://doi.org/10.1525/elementa.330.

Gale, F., and M. Edenborough. 2021. "Promoting Youth-Directed Social Change: Engaging Transformational Critical Practice." Social Work Education 40 (1): 58–79. Scopus. https://doi.or g/10.1080/02615479.2020.1779209.

Giddens, A. 1991. Modernity and Self-Identity: Self and Society in the Late Modern Age. Stanford: Stanford university Press.

Gregersen, T., R. Doran, C. A. Ogunbode, and G. Böhm. 2024. "How the Public understands and Reacts to the Term "Climate Anxiety." Journal of Environmental Psychology 96: 102340. https:// doi.org/10.1016/j.jenvp.2024.102340.

Hall, S., and A. O'Shea. 2013. "Common-Sense Neoliberalism." Soundings: A Journal of Politics and Culture 2013 (55): 8–24. https://journals.lwbooks.co.uk/soundings/vol-2013-issue-55/ abstract-7411/.

Hamamouche, M. F., E. Fantini, M. A. Saidani, and M. Khouadja. 2024. "Participatory Video on Groundwater Governance with Youth in the M'Zab Valley, Algeria." International Journal of the Commons 18 (1): 490–506. https://doi.org/10.5334/ijc.1363.

Heinemeyer, C., M. Reason, N. Quatermass, N. Wood, and O. Adekola. 2024. "Mutual Learning through Participatory Storytelling: Creative Approaches to Climate Adaptation Education in Secondary Schools." Research in Education 118 (1): 87–107. https://doi. org/10.1177/00345237241236191.

Herbert, J. 2021. "The Socio-Ecological Imagination: Young Environmental Activists Constructing Transformation in an Era of Crisis." Area 53 (2): 373–380. https://doi. org/10.1111/area.12704.

Hickman, C., E. Marks, P. Pihkala, S. Clayton, R. E. Lewandowski, E. E. Mayall, B. Wray, C. Mellor, and L. Van Susteren. 2021. "Climate Anxiety in Children and Young People and Their Beliefs about Government Responses to Climate Change: A Global Survey." The Lancet Planetary Health 5 (12): e863–e873. (21)00278-3 https://doi.org/10.1016/S2542-5196.

Holbert, N., M. Dando, and I. Correa. 2020. "Afrofuturism as Critical Constructionist Design: Building Futures from the past and Present." Learning, Media and Technology 45 (4): 328–344. https://doi.org/10.1080/17439884.2020.1754237.

Holloway, S. L., L. Holt, and S. Mills. 2019. "Questions of Agency: Capacity, Subjectivity, Spatiality and Temporality." Progress in Human Geography 43 (3): 458–477. https://doi. org/10.1177/0309132518757654.

Holmberg, A., and A. Alvinius. 2022. "Children as a New Climate Precariat: A Conceptual Proposition." Current Sociology 70 (5): 781–797. https://doi.org/10.1177/0011392120975461.

Hursh, D., J. Henderson, and D. Greenwood. 2015. "Environmental Education in a Neoliberal Climate." Environmental Education Research 21 (3): 299–318. https://doi.org/10.1080/1350462 2.2015.1018141.

Hynd, A. M., E. Thurbon, and H. Tan. 2022. "Tensions and War undermine Climate Cooperation – but There's a Silver Lining." The Conversation. http://theconversation.com/tensions-and-war-undermin e-climate-cooperation-but-theres-a-silver-lining-193847

Jones, L., K. J. Parsons, F. Halstead, and J. M. Wolstenholme. 2024. "Reimaging Activism to save the Planet: using Transdisciplinary and Participatory Methodologies to Support Collective Youth Action." Children & Society 38 (3): 823–838. https://doi.org/10.1111/chso.12819.

Jones, V., and T. Podpadec. 2023. "Young People, Climate Change and Fast Fashion Futures." Environmental Education Research 29 (11): 1692–1708. Scopus. https://doi.org/10.1080/13504 622.2023.2181269.

JustFutures. 2020. "JustFutures." JustFutures. https://justfutures.pt/

Kayumova, S., and D. J. Tippins. 2021. "The Quest for Sustainable Futures: Designing Transformative Learning Spaces with Multilingual Black, Brown, and Latinx Young People through Critical Response-Ability." Cultural Studies of Science Education 16 (3): 821–839. Scopus. https://doi. org/10.1007/s11422-021-10030-2.

Laclau, E., and C. Mouffe. 1985. Hegemony and Socialist Strategy Towards a Radical Democratic Politics (Second Edition). Edinburgh: Edinburgh university Press. https://doi. org/10.1515/9781474472593-004.

Lam, S., and C. D. Trott. 2024. "Intergenerational Solidarities for Climate Healing: The Case for Critical Methodologies and Decolonial Research Practices." Children's Geographies: 1–10. https:// doi.org/10.1080/14733285.2023.2301546.

Lee, C. C., and N. R. Schoonover. 2020. "My Life's Blueprint": Publishing Critical Youth Narratives in Community-Based Organizations." English Teaching: Practice & Critique 19 (1): 107–120. Scopus. https://doi.org/10.1108/ETPC-05-2019-0069.

Levrini, O., G. Tasquier, E. Barelli, A. Laherto, E. Palmgren, L. Branchetti, and C. Wilson. 2021. "Recognition and Operationalization of Future-Scaffolding Skills: Results from an Empirical Study of a Teaching–Learning Module on Climate Change and Futures Thinking." Science Education 105 (2): 281–308. https://doi.org/10.1002/sce.21612.

Li, C. J., J. H. Schulz, and S. Thuston. 2022. "After the Forum I Realized There is More I Can Do: Communicating Climate Change to Youth using Public Deliberation." Applied Environmental Education & Communication 21 (3): 254–272. Scopus. https://doi.org/10.1080/153301 5X.2022.2062068.

Liou, A., and I. Literat. 2020. "We Need You to Listen to us": Youth Activist Perspectives on Intergenerational Dynamics and Adult Solidarity in Youth Movements." International Journal of Communication 14: 4662–4682.

MacDonald, J. P., J. Ford, A. C. Willox, C. Mitchell, K. Productions, M. W. S. A. D. Media Lab, and R. I. Community Government. 2015. "Youth-Led Participatory Video as a Strategy to Enhance Inuit Youth Adaptive Capacities for Dealing with Climate Change." ARCTIC 68 (4): 486. https:// doi.org/10.14430/arctic4527.

Machin, A. 2022. "Climates of Democracy: Skeptical, Rational, and Radical Imaginaries." WIREs Climate Change 13 (4): 1–13. https://doi.org/10.1002/wcc.774.

Malafaia, C. 2022. "Missing School Isn't the End of the World (Actually, It Might Prevent It)': Climate Activists Resisting Adult Power, Repurposing Privileges and Reframing Education." Ethnography and Education 17 (4): 421–440. https://doi.org/10.1080/17457823.2022.2123248.

Malafaia, C., and M. Fernandes-Jesus. 2024. "Communication in Youth Climate Activism: Addressing Research Pitfalls and Centring Young People's Voices." In A. Carvalho & R. Tarla (Eds.), Environmental Communication (p. 572). Berlin/Boston: De Gruyter Mouton. https://doi. org/10.1515/9783110789553.

Malafaia, C., and T. Meriluoto. 2024. "Making a Deal with the Devil? Portuguese and Finnish Activists' Everyday Negotiations on the Value of Social Media." Social Movement Studies 23 (2): 190–206. https://doi.org/10.1080/14742837.2022.2070737.

Marks, E., E. Atkins, J. K. Garrett, J. F. Abrams, D. Shackleton, L. Hennessy, E. E. Mayall, J. Bennett, and I. Leach. 2022. "Stories of Hope Created Together: A Pilot, School-Based Workshop for Sharing Eco-Emotions and Creating an

Actively Hopeful Vision of the Future." Frontiers in Psychology 13: 1076322. https://doi.org/10.3389/fpsyg.2022.1076322.

Marquardt, J. 2020. "Fridays for Future's Disruptive Potential: An Inconvenient Youth Between Moderate and Radical Ideas." Frontiers in Communication 5: 48. https://doi.org/10.3389/ fcomm.2020.00048. 24

Mattheis, N. 2022. "Unruly Kids? Conceptualizing and Defending Youth Disobedience." European Journal of Political Theory 21 (3): 466–490. https://doi.org/10.1177/1474885120918371.

Mayes, E. 2023. "Young People Learning Climate Justice: Education Beyond Schooling Through Youth-Led Climate Justice Activism." In J. Wyn, H. Cahill, & H. Cuervo (Eds.), Handbook of Children and Youth Studies (pp. 1–14). Singapore: Springer Nature Singapore. https://doi. org/10.1007/978-981-4451-96-3_99-1.

Mayes, E., and D. Arya. 2024. "Just Participatory Research with Young People Involved in Climate Justice Activism." Journal of Applied Youth Studies 7 (3): 385–395. https://doi.org/10.1007/ s43151-024-00139-w.

McAfee, N. 2017. "Neo-Liberalism and Other Political Imaginaries." Philosophy & Social Criticism 43 (9): 911–931. https://doi.org/10.1177/0191453717713808.

McDonald, K. 2015. "From Indymedia to Anonymous: Rethinking Action and Identity in Digital Cultures." Information, Communication & Society 18 (8): 968–982. https://doi.org/10.1080/136 9118X.2015.1039561.

McGimpsey, I., D. Rousell, and F. Howard. 2023. "A Double Bind: Youth Activism, Climate Change, and Education." Educational Review 75 (1): 1–8. https://doi.org/10.1080/00131911.2022.2119021.

McGregor, C., and B. Christie. 2021. "Towards Climate Justice Education: Views from Activists and Educators in Scotland." Environmental Education Research 27 (5): 652–668. https://doi.or g/10.1080/13504622.2020.1865881.

Moore, M.-L., and M. Milkoreit. 2020. "Imagination and Transformations to Sustainable and Just Futures." Elementa: Science of the Anthropocene 8 (1): 081. https://doi.org/10.1525/elemen ta.2020.081.

Moser, S. C. 2016. "Reflections on Climate Change Communication Research and Practice in the Second Decade of the 21st Century: What More is There to Say?" WIREs Climate Change 7 (3): 345–369. https://doi.org/10.1002/wcc.403.

Mouffe, C. 2000. "Deliberative Democracy or Agonistic Pluralism." Reihe Politikwissenschaft 72: 1–17.

Napawan, N. C., S.-A. Simpson, and B. Snyder. 2017. "Engaging Youth in Climate Resilience Planning with Social Media: Lessons from #OurChangingClimate." Urban Planning 2 (4): 51–63. https://doi.org/10.17645/up.v2i4.1010.

Neas, S. 2023. "Narratives and Impacts of Formal Climate Education Experienced by Young Climate Activists." Environmental Education Research 29 (12): 1832–1848. https://doi.org/10.1 080/13504622.2023.2193684.

Neas, S., A. Ward, and B. Bowman. 2022. "Young People's Climate Activism: A Review of the Literature." Frontiers in Political Science 4: 1–13. https://doi.org/10.3389/fpos.2022.940876.

Norgaard, K. M. 2018. "The Sociological Imagination in a Time of Climate Change." Global and Planetary Change 163: 171–176. https://doi.org/10.1016/j.gloplacha.2017.09.018.

Ojala, M. 2007. "Confronting Macrosocial Worries: Worry about Environmental Problems and Proactive Coping among a Group of Young Volunteers." Futures 39 (6): 729–745. https://doi. org/10.1016/j.futures.2006.11.007.

Orman, F. 2022. "Youth's Everyday Environmental Citizenship: An Analytical Framework for Studying Interpretive Agency." Childhood 29 (4): 495–511. Scopus. https://doi. org/10.1177/09075682221107750.

Ostarek, M., B. Simpson, C. Rogers, and J. Ozden. 2024. "Radical Climate Protests Linked to Increases in Public Support for Moderate Organizations." Nature Sustainability 7 (12): 1626 1632. https://doi.org/10.1038/s41893-024-01444-1.

Pavenstädt, C. N., and S. Rödder. 2024. "Between Evidence First and Political Fight – understanding Dynamics of (de-)Politicization in uS Climate Movements' Future Narratives." Environmental Politics 33 (6): 1065–1086. https://doi.org/10.1080/09644016.2024.2324710.

Pepermans, Y., and P. Maeseele. 2016. "The Politicization of Climate Change: Problem or Solution?" WIREs Climate Change 7 (4): 478–485. https://doi.org/10.1002/wcc.405.

Pereira, L. M., T. Hichert, M. Hamann, R. Preiser, and R. Biggs. 2018. "using Futures Methods to Create Transformative Spaces: Visions of a Good Anthropocene in Southern Africa." Ecology and Society 23 (1): art19. https://doi.org/10.5751/ES-09907-230119.

Perheentupa, I., and P. Porkola. 2025. "Stimulating Political Imagination With Arts-Based Methods: The Case of utopia Consultation." Sociological Research Online 30 (2): 452–468. https://doi. org/10.1177/13607804241286416.

Pickard, S. 2019. Politics, Protest and Young People: Political Participation and Dissent in 21st Century Britain. United Kingdom: Palgrave Macmillan.

Piispa, M., and T. Kiilakoski. 2022. "Towards Climate Justice? Young Climate Activists in Finland on Fairness and Moderation." Journal of Youth Studies 25 (7): 897–912. https://doi.org/10.108 0/13676261.2021.1923677.

Pollio, A., L. Magee, and J. F. Salazar. 2021. "The Making of Antarctic Futures: Participatory Game Design at the Interface between Science and Policy." Futures 125: 102662. Scopus. https:// doi.org/10.1016/j.futures.2020.102662.

Poot, F., and J. Bauwens. 2023. "Like the Oceans We Rise': News Frames on Youth for Climate." YOUNG 31 (2): 107–123. Scopus. https://doi.org/10.1177/11033088221115964.

Qvortrup, J. 2009. "Are Children Human Beings or Human Becomings? A Critical Assessment of Outcome Thinking." Rivista Internazionale Di Scienze Sociali 117 (3/4): 631–653.

Rafaely, D., and B. Barnes. 2020. "African Climate Activism, Media and the Denial of Racism: The Tacit Silencing of Vanessa Nakate." Community Psychology in Global Perspective 6 (2): 71–86.

Rebelo, D., A. D. Garcia, T. R. Santos, A. Carvalho, C. Malafaia, and M. Fernandes-Jesus. 2024. "Prioritising Communities: Barriers to Climate Activism and Political Imagination among Minoritised Youth Groups." Journal of Youth Studies: 1–21. https://doi.org/10.1080/13676261. 2024.2419928.

Rousell, D., A. Cutter-Mackenzie, and J. Foster. 2017. "Children of an Earth to Come: Speculative Fiction, Geophilosophy and Climate Change Education Research." Educational Studies 53 (6): 654–669. https://doi.org/10.1080/00131946.2017.1369086.

Rousell, D., and A. Cutter-Mackenzie-Knowles. 2020. "A Systematic Review of Climate Change Education: Giving Children and Young People a 'Voice' and a 'Hand' in Redressing Climate Change." Children's Geographies 18 (2): 191–208. Scopus. https://doi.org/10.1080/14733285.2 019.1614532.

Salmenniemi, S., P. Porkola, and H. Ylöstalo. 2024. "Political Imagination and utopian Pedagogy." Critical Arts 38 (4-5): 24–39. https://doi.org/10.1080/02560046.2023.2299450.

Santos, T. R., D. Rebelo, A. Garcia, M. Fernandes-Jesus, C. Malafaia, and A. Carvalho. 2025. "Imagined Climate Futures and Collective Action: An Analysis of Affect in Dystopias and utopias by Young Climate Activists." Journal of Community & Applied Social Psychology 35 (2): e70072. https://doi.org/10.1002/casp.70072.

Santos, T. R., M. A. Üzelgün, and A. Carvalho. 2024. "Young Climate Activists in Television News: An Analysis of Multimodal Constructions of Voice, Political Recognition, and co-Optation." The Communication Review 27 (1): 32–54. https://doi.org/10.1080/10714421.2023.2251310.

Santos, T. R., M. A. Üzelgün, and A. Carvalho. 2024. "Reporting on Young Climate Activism: How Journalistic Multimodal Choices on Television Can Delegitimise Disruptive Dissent." Journalism Practice: 1–21. https://doi.org/10.1080/17512786.2024.2433649.

Sanz, T., and B. Rodriguez-Labajos. 2021. "Does Artistic Activism Change Anything? Strategic and Transformative Effects of Arts in anti-Coal Struggles in Oakland, CA." Geoforum 122: 41–54. https://doi.org/10.1016/j.geoforum.2021.03.010.

Schwartz, S. E. O., L. Benoit, S. Clayton, M. F. Parnes, L. Swenson, and S. R. Lowe. 2022. "Climate Change Anxiety and Mental Health: Environmental Activism as Buffer." Current Psychology (New Brunswick, N.J.) 42 (20): 1–14. https://doi.org/10.1007/s12144-022-02735-6.

Shamrova, D. P., and C. E. Cummings. 2017. "Participatory Action Research (PAR) with Children and Youth: An Integrative Review of Methodology and PAR Outcomes for Participants, Organizations, and Communities." Children and Youth Services Review 81: 400–412. https://doi. org/10.1016/j.childyouth.2017.08.022.

Nadia, Sitas, Odirilwe, Selomane, Ffion, Atkins, Elona, Hlongwane, Sandile, Fanana, Theresa, Wigley, Teresa, Boulle, CareCreative, DFeat once, urban Khoi soldier, Mac1,. (2022). "Youth Visions in a Changing Climate: Emerging Lessons from using Immersive and Arts-Based Methods for Strengthening Community-Engaged Research with urban Youth." Gateways: International Journal of Community Research and Engagement, 15(2), 1–40. Scopus. https://doi. org/10.5130/ijcre.v15i2.8318.

Skelton, T. 2010. "Taking Young People as Political Actors Seriously: Opening the Borders of Political Geography." Area 42 (2): 145–151. https://doi.org/10.1111/j.1475-4762.2009.00891.x. Swyngedouw, E. 2010. "Apocalypse Forever?" Theory, Culture & Society 27 (2-3): 213–232. https:// doi.org/10.1177/0263276409358728.

Taheri Demneh, M., and A. Zackery. 2023. "You Are Not One, You Are a Thousand: Findings from a Future-Oriented Participatory Action Research." Futures 154: 103245. https://doi. org/10.1016/j.futures.2023.103245.

Thew, H., L. Middlemiss, and J. Paavola. 2022. "You Need a Month's Holiday Just to Get over It!" Exploring Young People's Lived Experiences of the UN Climate Change Negotiations." Sustainability 14 (7): 4259. https://doi.org/10.3390/su14074259.

Thomas, I., A. Martin, A. Wicker, and L. Benoit. 2022. "understanding Youths' Concerns about Climate Change: A Binational Qualitative Study of Ecological Burden and Resilience." Child and Adolescent Psychiatry and Mental Health 16 (1): 110. Scopus. https://doi.org/10.1186/ s13034-022-00551-1.

Trott, C. 2021. "What Difference Does It Make? Exploring the Transformative Potential of Everyday Climate Crisis Activism by Children and Youth." Children's Geographies 19: 1–9. https://doi.or g/10.1080/14733285.2020.1870663.

Trott, C. 2024. "Ambivalent Adultism: Theorizing Hostile and Benevolent Adultism as Barriers to Intergenerational Climate Justice." PsyArXiv. https://doi.org/10.31234/osf.io/p9t8u.

Trott, C. D. 2019. "Reshaping Our World: Collaborating with Children for Community-Based Climate Change Action." Action Research 17 (1): 42–62. Scopus. https://doi. org/10.1177/1476750319829209.

Trott, C. D., T. L. Even, and S. M. Frame. 2020. "Merging the Arts and Sciences for Collaborative Sustainability Action: A Methodological Framework." Sustainability Science 15 (4): 1067–1085. Scopus. https://doi.org/10.1007/s11625-020-00798-7.

Trott, C., S. Lam, J. Roncker, E.-S. Gray, R. Courtney, and T. Even. 2023. "Justice in Climate Change Education: A Systematic Review." Environmental Education Research 29 (11): 1535–1572. https:// doi.org/10.1080/13504622.2023.2181265.

Urberg, L., and J. Öhman. 2024. "Resisting Sustainable Development: An Analysis of Young People's Online Discussions." Journal of Youth Studies 0 (0): 1–17. https://doi.org/10.1080/136 76261.2024.2322607.

von Zabern, L., and C. D. Tulloch. 2021. "Rebel with a Cause: The Framing of Climate Change and Intergenerational Justice in the German Press Treatment of the Fridays for Future Protests." Media, Culture & Society 43 (1): 23–47. https://doi.org/10.1177/0163443720960923.

Walker, C. 2020. "Uneven Solidarity: The School Strikes for Climate in Global and Intergenerational Perspective." Sustainable Earth 3 (1): 1. https://doi.org/10.1186/s42055-020-00024-3.

White, P. J., J. P. Ferguson, N. O'Connor Smith, and H. O'Shea Carre. 2022. "School Strikers Enacting Politics for Climate Justice: Daring to Think Differently about Education." Australian Journal of Environmental Education 38 (1): 26–39. Scopus. https://doi.org/10.1017/aee.2021.24.

Wyness, M., L. Harrison, and I. Buchanan. 2004. "Childhood, Politics and Ambiguity: Towards an Agenda for Children's Political Inclusion." Sociology 38 (1): 81–99. https://doi. org/10.1177/0038038504039362.

Yusoff, K., and J. Gabrys. 2011. "Climate Change and the Imagination." WIREs Climate Change 2 (4): 516–534. https://doi.org/10.1002/wcc.117.

The Version of Record of this manuscript has been published and is available in ENVIRONMENTAL EDUCATION RESEARCH, 2025, https://www.tandfonline.com/doi/full/10.1080/13504622.2025.2599808

Appendices

Appendix 1. Relevant collected texts from the Scopus and Web of Science databases

	Reference	Location portrayed	Journal
1	Doyle, 2020	United Kingdom	International Journal of Communication
2	Finnegan, 2022	United Kingdom and Ireland	Children's Geographies
3	Galafassi et al., 2018	Iberian Peninsula, Spain (Barcelona) and Sweden (Stockholm)	Elementa: Science of the Anthropocene
4	Hamamouche et al., 2024	Algeria (Southern)	International Journal of the Commons
5	Heinemeyer et al., 2024	United Kingdom	Research in Education
6	Holbert et al., 2020	United States of America (Northeastern)	Learning, Media and Technology
7	Jones & Podpadec, 2023	United Kingdom	Environmental Education Research
8	Jones et al., 2024	United Kingdom and Vietnam	Children & Society
9	Li et al., 2022	United States of America (Missouri)	Applied Environmental Education and Communication
10	MacDonald et al., 2015	Canada (Nunatsiavut, Labrador)	ARCTIC
11	Marks et al., 2023	United Kingdom (southwest)	Frontiers in Psychology
12	Napawan et al., 2017	United States of America (San Francisco Bay, California)	Urban Planning
13	Pereira et al., 2018	South Africa (Cape Town)	Ecology and Society
14	Pollio et al., 2021	Australia (Hobart); New Zealand (Christchurch); Chile (Punta Arenas)	Futures
15	Rousell et al., 2017	Australia (Northern New South Wales)	Educational Studies
16	Salmenniemi et al., 2024	Finland (Universitu of Turku)	Critical Arts
17	Sitas et al., 2022	South Africa (Cape Town)	Gateways
18	Taheri Demneh & Zackery, 2023	Iran (Isfahan)	Futures
19	Trott et al., 2020	United States of America and Haiti	Sustainability Science

The Version of Record of this manuscript has been published and is available in ENVIRONMENTAL EDUCATION RESEARCH, 2025, https://www.tandfonline.com/doi/full/10.1080/13504622.2025.2599808