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Towards Climate Justice Education: Views from activists and educators in Scotland.

Abstract

In the context of a resurgence of civic activism to address climate change, we present findings from an exploratory research project on climate justice education (CJE). We conducted deliberative focus groups and interviews with activists, advocacy workers and educators in order to address three broad aims: to consider the ways in which different stakeholders conceptualise climate justice; to examine how teachers and activists perceive challenges to, and opportunities for, developing climate justice education; to explore the potential for recognising activism and civic engagement as an educational process, considering both activists' views on education and educators' views on activism in this context. Activists recognised the potential for CJE which is connected to social movements (especially youth-led movements), local communities, and addresses the affective dimensions of the climate crisis. Although our teacher participants shared some of the analyses of the activists, they were less well informed about climate justice as a concept and were more ambivalent about the prospect of learning through and from activism.

Keywords: climate justice education, learning for sustainability, cognitive justice, cognitive praxis, sustainability education, social movement learning, activism, education, teachers

Introduction: Climate Justice Education and Learning for Sustainability in Scotland

This paper presents the findings from an exploratory research project, whose overarching aim was to inform the development of climate justice education (CJE) within an ostensibly accommodating Scottish policy context. Specifically, we focus on the interface between formal education and learning through climate activism, in a context where young climate strikers are demanding the prioritisation of the climate crisis in education. The rationale for our focus on climate *justice* rather than mere climate change, was borne of our shared

conviction that education fit for addressing the climate crisis must move away from a vague discourse of undifferentiated responsibility and agency. It is arguably difficult to generate political momentum for radical climate action if swathes of the population either feel excluded from such action or, even worse, recognise the disproportionately negative impact that climate action would have on their own material living conditions.

Climate justice is a concept that prioritises the theories and politics of social justice in debates over climate action. As such, it is an increasingly ubiquitous concept in activist and policy discourse worldwide, including Scotland. Demands for climate justice underpin the praxis of grassroots movements such as the Scottish Youth Climate Strike and Extinction Rebellion (XR), as well as more established Environmental NGOs (ENGOS) in Scotland. Moreover, the Scottish Government has readily adopted the discourse of climate justice. Indeed, First Minister Nicola Sturgeon recently delivered a keynote speech at the 2019 World Forum on Climate Justice held in Glasgow, Scotland, wherein she discussed the importance of a just and fair transition away from a hydrocarbon economy in Scotland (Jafry, Mattar & Mikulewicz 2020). Despite this, climate justice remains an underdeveloped and poorly grasped concept in Scottish education. This is surprising since Scotland arguably has an internationally unique sustainability education approach termed [Learning for Sustainability \(Lfs\)](#), which can be understood as

... enabl[ing] learners, educators, schools and their wider communities to build a socially-just, sustainable and equitable society. An effective whole school and community approach to Lfs weaves together global citizenship, sustainable development education, outdoor learning and children's rights to create coherent,

rewarding and transformative learning experiences. (Learning for Sustainability National implementation Group 2016: 7)

This key educational priority requires that all learners have an entitlement to LfS and that all teachers and education professionals address LfS in their practice. On the face of it, CJE can be accommodated in this educational imperative yet we argue that this housing is problematic in a context where young people are both demanding climate justice and critiquing their own educational experience. Furthermore, we suggest that it is fruitful to think of climate activism as educative in its own right, as different age groups and generations learn together to express their collective agency as citizens.

Yet as we have found, addressing climate justice in education is no mean feat. This is partly to do with the complex interaction between social injustice and climate change, and partly to do with the contested nature of *justice* itself. We argue that failure to attend properly to this in educational settings (both formal and informal) is bound to reproduce uncontentious, if not hegemonic, conceptualisations of justice in relation to climate change (McGregor *et al.* 2019; Scandrett 2016). Thus, there is a need for climate justice to be explored through critical educational processes rather than simply being assumed. With this in mind, we conducted initial exploratory research with a range of stakeholders between 2017 and 2019. We engaged with a range of participants: climate activists from different generations; teachers from across Scotland engaged in professional development in LfS; and environmental advocacy workers. We gathered qualitative data to address three broad aims: to consider the ways in which different stakeholders conceptualise climate justice; to examine how teachers and activists perceive challenges to, and opportunities for, developing CJE; to explore the potential for

recognising activism and civic engagement as an educational process, considering both activists' views on education and educators' views on activism in this context.

If we consider education as a broad concept then we must understand formalised teaching and learning within curricular structures and classroom spaces in relation to more informal social movement learning such as climate activism. The central philosophical vision expressed in Scottish LfS policy promotes a holistic approach, encouraging educators and learners to engage with complexity, messiness and uncertainty in an ongoing open-ended pedagogical endeavor (Higgins and Christie 2018). It is precisely this 'messiness' that is one of the hallmarks of learning through activism as it follows no set curriculum and is often unordered, episodic and incidental (Crowther and Martin 2010). This is why we are particularly interested in the relationship, or lack thereof, between climate activism involving young people and more formal education spaces. We now offer a brief theoretical discussion of climate justice, with particular emphasis on its contested nature and its relationship to social movement learning and knowledge production.

Climate justice and social movement learning

As discussed, climate justice rejects the starting point of an undifferentiated 'we', allowing escape from the social differences and antagonisms of everyday life into the abstraction of the Anthropocene. The normative concept of justice presumes asymmetrical distributions of culpability, vulnerability, debt, desert and agency. As such, it is tempting to think of climate justice as a radically insurgent discourse, which challenges the more mainstream and less overtly political discourse of sustainability. Whilst this is partially true, it is important to recognise that climate justice is not only a multi-dimensional concept, but an ideologically contested one.

There are different social-ontological dimensions of climate (in)justice, different spatial scales, intersecting axes of oppression and a range of practical domains in which it manifests. The most widely understood definition of climate injustice is the asymmetrical distribution of climate impacts on vulnerable people who have contributed least to greenhouse gas emissions. However, this distributive definition says little about cultural recognition and political representation. Whilst these heterogeneous dimensions of climate justice informed the coding of our data, a fuller discussion of the conceptual heterogeneity of climate justice is beyond the scope of this article. Instead, we will emphasise the politics of knowledge production in the context of CJE.

Ideological contestation

Climate justice discourses are ideologically contested, contingent on the worldviews and material interests of social groups who espouse them (Klinksy 2019; Scandrett 2016; Schlosberg and Collins 2014; Bond and Dorsey 2010). In fact, the dominant discourse of climate justice in any given context must be recognised as the outcome of power/knowledge struggles between different social actors such as grassroots activists, policy elites, governments, NGOs, academics, business lobbyists, workers' unions and the UN (Boran 2019; Scandrett 2016; Bond and Dorsey 2010; Jamison 2010; Lohmann 2008).

Articulations of climate justice can be located in political philosophy and have emerged through the praxis of social movements (Tokar 2019; Scandrett 2016). In political philosophy, normative arguments for justice are deeply contested and can be used to defend socialist, feminist, reformist ('ecological modernisation'), neoliberal ideologies or various configurations thereof (Scandrett 2016). Originating in the Global Justice Movement in the

first decade of the 21st Century, principles of climate justice were first explicitly articulated in the Bali Principles of Climate Justice produced by the International Climate Justice Network (Scandrett 2016; Schlosberg and Collins 2014; Jamison 2010). The discourse took hold in 2007 at the Conference of Parties in Bali, and has since been espoused by policy elites in UN negotiations (Scandrett 2016; Jamison 2010).

As often happens with the mainstreaming of radical discourse, it's meaning and practice begins to drift as more powerful elite NGOs, state actors and policy makers define its parameters in line with their own ideologies. To briefly illustrate this we consider the differences between the Bali Principles and the vision of climate justice offered by the Mary Robinson Foundation. The Bali Principles were informed by antecedent environmental justice movements, emphasising community sovereignty, self-determination and the recognition of indigenous culture in the face of expropriation by the hydrocarbon industry (Schlosberg and Collins 2014). The social relation to nature within this discourse is opposed to its commodification and the marketised discourse of 'ecosystem services'. These principles were further developed by the Climate Justice Action network in 2009 and perhaps found their most radical expression in the respective Universal Declaration of the Rights of Mother Earth (Cochabamba, Bolivia) in 2010, and then the Margarita Declaration on Climate Change (Margarita Island, Venezuela) in 2014. Across this time period, we can observe the emergence of several consistent principles from the Climate Justice Movement including "protection of indigenous peoples, notions of respect and recognition, the maintenance of identity and integrity, the right to be free of pollution, the role of historical responsibility and restorative justice, and more transparent and open participatory governance processes" (Schlosberg and Collins 2014: 367). The underpinning ideology explicitly identifies extractivist neoliberal capitalism and its neo-colonial exploits as the root cause of problem.

By contrast, the Mary Robinson Foundation, whilst progressive in some respects, offers a good example of a reformist approach to climate justice seeking a rapprochement with the free market. Rooted in development discourse, it seeks to ameliorate injustice through a liberal human rights approach whilst arguably failing to challenge the vested interests of policy elites who have the most power to shape the discourse (Scandrett 2016; Schlosberg and Collins 2014; Bond and Dorsey 2010). The Mary Robinson Foundation is “most well known for working with market actors, proposing a ‘moral economy’ in economic practice” that more grassroots social movement actors oppose as being both individualistic and insufficiently critical of neoliberal ideology (Schlosberg and Collins 2014: 366). As the Margarita Declaration unequivocally states, “the structural causes for climate change are linked to the current capitalist hegemonic system. Fighting the climate change involves changing the system.” (Margarita Declaration on Climate Change, 2014).

Moreover, it would also be a mistake to underplay the tensions within social movements and between social movement actors themselves. Three observations can be made in this regard. Firstly, the different life experiences and struggles of activists in the Global North and South make it difficult to come to a consensual worldview on what the ‘justice’ in climate justice entails (Jamison 2010: 367). Secondly, we can make a distinction between a climate justice movement ‘in itself’ and ‘for itself’, so to speak: Scandrett (2016) makes the astute distinction between the explicitly named ‘climate justice movement’ and those communities whose struggles against the vested interests of the hydrocarbon industry can be ‘objectively’ understood as climate justice without the actors adopting this analysis themselves. Finally, there are well known tensions within the contemporary climate change movements (including XR and the global Youth Climate Strikes) about the extent to which a ‘justice’ framing is

divisive or galvanising. Whilst more could be said, the salient point is that the construction of climate justice discourse knowledge is a hegemonic process, with dominant definitions bearing the ideological inflections of more powerful actors.

Knowledge production, education and learning

Our next task is to clarify what this ideological contestation means for CJE. As we have seen, it is crucial to recognise that knowledge claims about climate justice and the learning they generate can partly be attributed to social movements (Gobby and Gareau 2019; Scandrett 2016; Bond and Dorsey 2010). Moreover, these movements themselves are heterogenous, encompassing a range of indigenous and land-based movements in the Global South; a continuation of environmental justice activism; an evolution of the transnational Global Justice movement; and urban social movements focused on the concept of Just Transition away from climate change exacerbating industry (Tokar 2019; Scandrett 2016; Jamison 2010).

Although social movements have no ‘curriculum’ per se, and although much of the learning they generate may not be explicitly recognised as such, Eyerman and Jamison (1991) have argued that the learning and knowledge they generate is their defining characteristic: a process they call ‘cognitive praxis’, emerging over time through dynamic interactions between different groups and organisations. Conceptualised as processes of social learning, environmental movements in the broadest sense have played a crucial role in catalysing new worldviews, forms of socio-political organisation and technologies (Jamison 2001; Eyerman and Jamison 1991). Despite this ‘cognitive’ framing of social movements as processes of social learning, the analyses and perspectives of climate justice movements are often framed out of mainstream educational narratives and policy discourse. Partly, the reasons for this are

epistemological: grassroots community-based movements are often derided or dismissed by more powerful actors for being insufficiently ‘global’, focused more on concrete ‘local’ issues and demands that may not be experienced directly in terms of climate injustice, or articulated in terms of carbon dioxide equivalent (CO₂e). Policy regimes framing the *lingua franca* in the abstract language of ‘fungible’ CO₂e, “have had to suppress the candidacy of actors who happen to be resistant to quantification ... [in an] attempt to repress knowledge of the plurality of alternative futures” and an “attempt to repress popular participation in the taking of alternative decisions” (Lohmann 2005: 214-222). Indeed, how the abstract nature of ‘climate’ translates into the thematic universe of the everyday struggles (Freire 1972) is an urgent challenge for sustainability education.

Despite the fact that changes in the curriculum over long periods of time are attributable to the insurgent ideologies developed by social movements (Zald 2000), educators working in more formal educational spaces often labour under the misapprehension that education should and can be neutral or ‘apolitical’. Despite the radical sounding Scottish policy context of LfS, it remains open to question what educators would make of the utopian proposition in the Margarita Declaration that “[e]ducation must look like the society we dream of. It must be revolutionary and transform reality. If it cannot undertake such transformations, it does not work” (Margarita Declaration on Climate Change, 2014). In mainstream education and within contemporary climate change movements, there are those who argue that the ecological ‘tipping point’ is so urgent that we cannot afford the luxury of such ‘utopian’ solutions. However, we believe that educationally speaking, climate justice discourse provides a cogent analysis of why climate action, as an inescapably socio-political problem, must take account of different forms of social power and inequality. In the context of indigenous climate justice, Whyte (2019) refers to this social injustice as the ‘relational

tipping point' approached through the operations of colonialism and capitalism that must not be forgotten at the expense of responding to the 'ecological tipping point'.

Despite a proliferation of literature on sustainability education very little addresses CJE directly. However, our study does build on established critiques of mainstream approaches to sustainability education that challenge the the inherent contradictions between sustainability and neoliberal capitalism (Sterling 2017; Selby 2015, 2010; Selby and Kwaga 2011).

Additionally, although much research exists on the need for educators to engage with ideological analysis, to question deeply held and often ingrained assumptions and unlearn unsustainability (see for example Jickling 2017; Sterling 2010-11; Wals 2010 for further discussion) the specific context of CJE within these debates often remain unexplored. An exception in the paucity of CJE specific literature is Tagg and Jaffry (2018), who have also recently explored CJE in Scottish primary education, focusing on the translation of complex scientific research into primary school settings. However, the deeply contested concept of *justice* itself is, by and large, taken for granted in this work. More promising in this particular regard is the recent research on CJE undertaken by Stapleton (2018), albeit in an American context. Stapleton (2018) argues that an explicit focus on social justice in climate change education is a powerful means of engaging with young people who can themselves identify with classed, raced and gendered forms of oppression. Furthermore, Stapleton argues that such a focus intentionally engages the passions, engendering a sense of agency that functions to overcome the 'despair problem' much lamented in the climate education literature. In a recent study of what young people learn from youth climate activism in Australia, Nairn (2019) depicts young activists who found hope by learning to collectivise their sense of despair and act on it together as citizens. Together, what these studies suggest is that to be

effective, climate education needs to engage the passions through a dual focus on (in)justice and collective agency.

Building on these insights we believe that the Scottish policy context offers an opportunity to radicalise education and address climate justice. But to do so it must recognise the rich vein of untapped ‘curriculum’ generated by the conflicts and tensions climate activist movements create and highlight. We believe climate justice offers a starting point for such critical curriculum. We draw on the experiences of teachers and activists as two groups who have an opportunity to engage in this learning process. Framed in this way our study provides an opportunity to gain a fuller understanding of teachers’ own understanding of climate justice and their perceptions of activism in this regard and activists’ opportunities for critically reflective learning when engaged in the process of demonstration and protest. It follows that it is not our intention to present activism as unproblematic, nor do we wish to portray activists as an ideal type *per se*. Rather, it is our aim to discuss the social movement learning opportunities that activism as a form of educational engagement affords. With this in mind, we now offer a brief account of our research methods, involving deliberative focus groups and interviews with educators, activists and advocacy workers.

The study: Data collection and analysis

This nationally focused exploratory study (2017-2019) employed focus groups and semi-structured interviews to better understand the potential for a CJE which both addresses the claims and practices of climate justice movements, as well as the perceived constraints and possibilities afforded by the policy context. Since climate justice is a contested concept, we approached our data collection believing that it was important to create space to explore a

meaning before espousing a cause. To this end, our focus groups and interviews were designed to facilitate critical reflection in relation to conceptualisations of climate (in)justice, sources of knowledge and ideological perspectives. We invited respondents to critically reflect on their own activist and educative practice, and to speculate on what CJE should look like, both in terms of curriculum and pedagogy. Since we were especially interested in developing a better understanding of the relationship between formal curricular spaces and the more informal learning generated through activism, we sought activists' perceptions and experience of education and educators' perceptions of activism. We conducted focus groups and semi-structured interviews (each lasting around one hour) with educators, a mix of young and older activists and environmental advocacy workers from a range of different organisations; comprising a total sample of 59 participants including 8 focus groups and 14 individual interviews.

Initially, we held teacher focus groups in Aberdeen (n=10), Glasgow (n=9) and Edinburgh (n=7) gaining a fairly wide geographical spread. Our total sample of teachers (n=26) covered a range of contexts (primary, secondary, additional support needs and further education) and crucially each participant had recently engaged in professional development in LfS. We held smaller focus groups in Edinburgh with young people from two different youth climate action organisations, Climate 2050 (n= 3) and People and Planet (n=3)². We held one focus group in Edinburgh with advocacy workers from different Scottish ENGOS (n=6). Lastly, we held two focus groups with XR activists at a 'midsummer rebel camp' outside the Scottish Parliament in Edinburgh (n=12 and n=9), both were intergenerational including university students as well as retirees.

² Unfortunately, these focus groups were smaller due to the non-attendance of some people who had previously agreed to participate.

In addition, we carried out follow-up semi-structured interviews with a sub-sample of teachers drawn from the work above, as well as two interviews with relevant stakeholders who had not participated in the focus groups (n=14). One new interviewee was a young climate justice activist from the Young Friends of the Earth-Europe network, and another was a community learning and development worker³ whose work focused on community responses to climate change, with a particular focus working with black and minority ethnic (BME) communities on issues of climate justice. These interviews enabled a deeper exploration of themes from the focus groups and the one-to-one setting allowed us to triangulate our teacher data. A weakness is no such interviews with activists, despite extending invitations.

All interviews and focus groups were fully transcribed and analysed by the authors and a research assistant. Working with NVivo, the corresponding author and the research assistant initially coded a sample (two interviews and two focus groups), forming the basis of a discussion through which an initial hierarchical coding structure was agreed upon. This structure still allowed for autonomous coding beneath the agreed hierarchy. The team then coded half of the data using this coding structure before meeting to compare and discuss. We used NVivo's inter-coder reliability test function as a heuristic tool to identify areas of weaker agreement for discussion. This allowed us to understand these differences of perspective before moving on to code the rest of the sample. The same procedure was repeated once all the data had been individually coded.

³ In Scotland, Community Learning and Development (CLD) is a recognised profession, encompassing community development, community-based adult education and youth work: <http://cldstandardscouncil.org.uk/> for more information.

Reflecting our research interests, the eventual hierarchical coding structure was comprised of four master nodes with further categorical sub-divisions: understandings of climate justice, sources of knowledge on climate justice, ideological perspectives and, of course, education. Our focus on ideological perspectives was sub-divided into a focus on participants' critique or defence of the status quo, their visions of the future, and their theories of change (including perceptions of activism) because we understood these as primary elements of any ideological system. The master node on education was sub-divided into: explorations of curriculum and pedagogy (both real and speculative), understandings of agency in education (both the agency of young people and the agency of teachers and educators to address climate injustice), connection to place and community, and critical and emotional literacy. Data points could be assigned to multiple nodes. These first and second-level nodes were determined through dialogue, where we considered what had emerged from the data in the light of theoretical constructs informing our research (as discussed earlier). Below this hierarchy, each researcher had the autonomy to construct further nodes, reflecting our own interpretations of what was emerging inductively from the data.

In what follows, we offer a selective examination of our project findings. Specifically, we focus on the potential for recognising activism and civic engagement as an educational process, primarily considering activists' views on education and, to a lesser extent, educators' views on activism in this context. Accordingly, our analysis of understandings of climate (in)justice is focused on agency: in what ways can we understand climate justice as an issue of agency? How is agency ideologically constructed by various actors? Whose knowledge counts and what counts as knowledge?

Findings and discussion

Climate justice education: perspectives from activists and advocacy workers

For activists and advocacy workers, climate justice is an orienting concept for the ‘cognitive praxis’ that we described above. It provides a starting point for exploring different understandings and intersections of injustice in the context of the climate crisis, often through experiments with participatory democracy.

I think everyone’s idea of a just world is very different. It’s gonna be never perfect for everybody. So, I think what XR’s doing with a Citizen’s Assembly—a well planned Citizens Assembly would allow government to be as fair and as just as it is able to be because it’s currently not working. (Sally, Young Activist)

Thus, the cognitive praxis of climate action movements such as XR is partly about prioritising agency itself as a climate justice issue. Citizens are positioned as thinking political agents who learn to exercise their agency, rather than as consumers who defer to technocratic expertise. This is exemplified below by young XR activist Cristina:

The problem is that people don’t realise that there are things they can do, don’t feel they have a voice because of the way our system works. It doesn’t enable people to speak up and feel that they can affect change ... I just set aside the April Rebellion, locked it in my diary as soon as I heard about it ... Since then, it was a really intense couple of weeks and I’m still kind of trying to process and figure out what my voice is in all of this, because certainly you’re given a voice and a platform as an equal, and

I'm not used to that. I don't have to fight anymore, alright, this feels weird. (Cristina, Young Activist)

More broadly, since the discourse of climate justice cuts across environmental and social issues, activists and advocacy workers commented on how it generates opportunities to build solidarity in civil society through informal learning. Reflecting on issues of solidarity, activists and advocacy workers argued that climate justice discourse offers a cogent analysis of why tackling climate change is fundamentally about tackling different forms of social power. For example, this young activist argues that climate justice is about asking:

... how are the 'positive' solutions that we propose going to affect people, and making sure that you are taking into consideration culture, race, gender, class, all of these things when you are trying to implement something, and I think that that is almost a bigger barrier than climate change, because if we are just going to implement a system that is just going to be unjust ... I don't think we can call it sustainable.

(Dan, Young Activist)

Therefore, the discourse of climate justice provides a necessary space for developing an analysis of the ways in which agency to act is tempered by structural injustices. This was expressed eloquently by a young working-class XR activist, Steven, in a discussion focusing on class and climate action:

I come from a low-income area and climate change is just not on our minds. It's putting food on the table and trying to find work. And it's a very middle-class snooty thing, this trying to tell people how to eat, how to do things, which is more expensive

and more difficult for us, and that is a very big climate injustice in a sense ... A lot of people just feel that everyone can do it, everyone should do it and everyone must do it, but not everyone can and that's the thing that often gets overlooked. (Steven, Young Activist)

This particular discussion generated a critique of neoliberal accounts of agency—what it actually means to ‘do it’. Expressions of citizen agency are reframed by movements such as XR and the Youth Climate Strike movement as collective public acts, rather than as individual marketized acts of ‘ethical consumerism’, contingent on one’s class position. It is important to note that centring agency moves beyond a purely distributive view of climate (in)justice by recognising that there is a participatory, and to some extent epistemic, dimension centred on who has the power to shape the discourse of climate action itself. This dimension was expressed by different participants as being raced, classed, gendered, even generational. Furthermore, these axes of power were understood to span local, national and global scales. Here, People and Planet activist Dan reflects on the epistemic injustice shaping relationships between the Global North and Global South:

[P]articularly with the Global South, there is racism, which is part of the injustice that plays into it where you [The Global North] just say ... if we give the indigenous groups all the land rights that they are asking for, well they are just going to exploit it as well, but at least we have the data we can use to exploit it in just the right way. (Dan, Young Activist)

What Dan is articulating here is about more than mere participation. It is explicitly a matter of epistemic injustice, manifested in opposing epistemic modes of ‘valuation’ of the

environment: whilst one is based on community knowledge, indigenous land rights and living in harmony with nature, the other privileges technocratic expertise, commodifies the carbon cycle and speaks the economic language of ‘externalities’ (Martinez-Alier 2014: 241). To offer another example, the exclusion of the voices and analysis of BAME communities in movements and in policy spaces in Scotland was an overarching concern for community learning and development worker Bitá, who was very clear that community sovereignty and the valuing of local community knowledge ought to be a key principle of climate justice in Scotland. Here, Bitá is drawing on a conception of justice in policy making that recognises and affirms the situated knowledge that group members bring to debates on social processes because of their position in them (Lister 2002; Young 2002). Based on her experience of operating in ‘invited spaces’ with government actors, Bitá reflected upon the way in which the trope of epistemic ‘complexity’ is used by policy elites to reinforce technocratic expertise and justify the exclusion of certain voices from policy making processes in Scotland.

[P]olicy makers decision makers do not engage with the people that those policies are affecting ... [Y]ou'll hear it again and again—too complicated, too messy ... For me this is what that means: you are not actually wanting to listen and hear the voices of the people that are speaking, that are affected. (Bitá, Advocacy Worker and Community Worker)

Against this tendency, grassroots movements challenge neoliberal ideology by rejecting the dominant frame of what it means to act. This isn't to say that there are no intractable social inequalities that impact participation in such movements themselves. On the contrary, and the discourse of climate justice orients internal activist learning in this regard. However, they do

offer glimmers of ‘climate action’ that directly challenge the ‘theory of change’ implicit in neoliberal ideology.

We invited activists to reflect on what they had learned through climate justice activism, and to consider this learning alongside their experience of formal education. This generated several insights worth sharing. ‘Education’ in climate movements is an explicitly passionate engagement through which activists learn about the social organisation of power, which often remains invisible, until it is challenged. As young activist and Friends of the Earth organiser Rachel succinctly summed up for us, “education, as I see it, is about challenging power structures.” The sense of overcoming despair through learning collectively to challenge power was a recurring theme in our conversations with both veteran activists and younger people whose activist trajectory was only beginning. For example, young XR activist Jamie spoke of the “positive arc of friends and new acquaintances”, the “feeling of solidarity” that couldn’t be undone, and the “sharpening” of his own ideas it catalysed. Similarly, veteran activist Mae discussed the feeling of solidarity and the unleashing of collective creativity and agency that overcomes feelings of depression and existential grief:

I’ve always loved all the banner making, all the ways we can use our creativity to put out our message. And yeah, the creativity of different actions. I just feel like it’s really nurtured me deeply, and given me a sense of hope and purpose. I just feel like otherwise it’s so easy to just feel really despairing, but taking action and being together with like minds just feels really such a positive thing to do. I’d rather die trying than sitting in a corner feeling deeply depressed. That’s what it boils down to for me really. (Mae, veteran climate activist and artist)

For Cristina, the explicit attention that the emerging cognitive praxis of XR pays to the affective dimensions of the climate emergency, were what initially resonated with her:

Yeah, it's a trauma response isn't it, and that's some of the language that resonated with me with XR, them talking about that and the importance of acknowledging the grief surrounding it and addressing those feelings ... [W]e're very clever at just switching off and turning away. It's a defence mechanism. (Cristina, Young Activist)

Rather than being an impediment to 'objective' processes of learning and knowledge acquisition, in many cases it seemed clear that the efficacy of activist learning can be attributed to a passionate intrinsic motivation to challenge injustice. For example, consider the following exchange between these two young divestment activists:

[I]n purely environmental terms, I learnt a lot from ... [activism], mainly terminology-based, like I didn't really know what divestment meant ... I didn't know much about investment companies. I didn't really realise, because when we were doing research into like the university's investments ... you didn't really realise how tied up education is with corporate stuff. (Mae, Young Activist)

It's sort of like a crash course in economics isn't it? (Cameron, Young Activist)

Several activists reflected on the ways in which their activism challenged them to reframe education itself:

I think I have reflected a lot on how learning happens in general, how humans learn ... [W]ith the divestment campaign I definitely learnt a lot ... I think being in that situation just taught me so much about how you learn collectively rather than

individually and being lectured at ... I think my involvement in activism has contributed to my thoughts on that and how I learn, and I think I learn things a lot better now because I know myself. (Dan, young activist)

Activists, from ‘baby boomers’ to ‘millennials’, juxtaposed their activist learning with their experience of formal education. In doing so, many of them were clear that education change must be an ‘extension of system change’, as young activist Cristina put it. Visions of what this actually entailed were very diverse, but a common view held that education itself cannot be reformed as if it exists in a vacuum—it is part and parcel of any authentic effort to bring about the social change required by climate justice. For some activists, this meant placing class at the heart of the conversation. Steven reflected on the middle-class bias of much sustainability discourse and juxtaposed it to his own working-class experience of education:

In a low-income school I came from, what were they guiding us to? They weren’t guiding us to being ecologists. [They were guiding us to being] [h]airdressers, mechanics. (Steven, Young Activist)

Building on this, Sally recognised that this class-blindness extends into adult life. She argued that CJE should focus on lifelong learning, but that this requires social policy reforms which recognise the structural impediments to working-class adults exercising their agency:

[W]hat do we need to implement to allow adults to be involved in lifelong learning? So, I did suggest Universal Basic Income, or get companies to provide Fridays for learning or something where they still pay your wage, but that Friday is dedicated to learning. (Sally, young activist)

Thus, many of our activist respondents viewed CJE as a radical project which is both decolonial and post-capitalist in outlook, critical of, and unable to flourish in, a neoliberal context. Consider the following exchange between XR activists, where Roland expressed the need to envision new ideological narratives in education:

I was thinking about the insidious nature of capitalist ideology inside education of all subjects ... Let's write new stories, let's talk about 'what does life look like after capitalism, what does life look like in a socially just world? Where are those stories? Where's our story for that? (Roland, XR Activist)

Well it must also look like a new kind of economics mustn't it, where your impact on the environment is part of that economics. At the moment, that bit is free. It costs you money to take the oil out of the ground, but the oil doesn't cost anything. (Pat, XR Activist)

It's like women's work doesn't cost anything. It also must be about a much more equal society where people can't go and burn up an enormous amount of fossil fuels just because they happen to have a lot of money. (Gail, XR Activist)

I'd base that on land ownership as well and that's clearly reflected in the ownership of land throughout Scotland. (Roland, XR Activist)

Even in this one small extract, we can begin to discern the rudiments of a radical curriculum for CJE that makes the connections between class, gender and climate by challenging the economic system that ties social power to private wealth, and treats social reproductive

labour and ‘ecosystem resources’ as ‘free gifts’ expropriated from women and communities and then incorporated into circuits of capital accumulation (Arruza, Bhattacharya and Fraser, 2019). This is a ‘curriculum’ that critically explores the ways in which Scotland’s undemocratic land ownership patterns stymie community-led solutions (Revell and Dinnie 2020). This kind of activist learning is also manifestly intergenerational, with parents learning from and alongside their children, and different generations of activists learning alongside each other. Jenny, who was making an ‘ecocide’ arch outside the parliament with her daughter, articulates the importance of intergenerational teaching and learning:

Having experienced the climate strikes here [it’s] phenomenal. The kids are leading this, there’s no doubt about it ... Teachers, educators, carers we’re going to get switched by our kids, the kids are going to change things. I see it ... I attended the rally at the end of May and some of them are doing speeches, 13, 14 year old kids—totally moved, in tears, it was just unbelievable. (Jenny, Activist and Mother)

Authentic spaces for intergenerational learning emerge when education is rooted in, and not abstracted from, communities, as it often is in formal classroom spaces. As young activist Steven exclaimed, “don’t let education just be focused in the school but let it be focussed in the community!” The importance of CJE being rooted in the concrete living conditions of local communities was a recurring theme in our conversations with activists who spoke about their work in community gardens, community food projects and so on. In this sense, injustice is framed around actual issues facing poorer communities such as food justice, housing conditions and lack of access to greenspace.

Overall, our activist respondents recognised the potential for CJE which connects with social movements (especially youth-led movements), is embedded in community, and addresses the affective dimensions of the climate crisis. Opposed to the critique that social movements are mere affective outpourings and biased ‘politicised’ sources of knowledge, these activists argued that all education is implicitly political and that political engagement is educative. Passionate struggles against unjust power relations are understood as hallmarks of authentic education, authenticity being an important concept in discussions of how to introduce CJE to more formal educational spaces. A recurring view was that teachers need to be given the space to explore their own affective responses to the climate emergency and their own ideological assumptions, before educating children and young people who are capable of recognising inauthenticity:

[I]t becomes preachy doesn’t it, if they’re not truly authentic, if they haven’t addressed their own feelings around the subject. It’s harmful then because people pick up on that on some level. (Cristina, Young Activist)

Even in Scotland, with its ostensibly accommodating and radical policy architecture of LfS, this vision of education represents a serious challenge to current educational practice. The reasons for this challenge are various, including structural constraints on the agency of teachers, assumptions and concerns about the capabilities and emotional resilience of children and young people and simply a lack of knowledge and understanding of activist movements and their analyses of climate justice. We explore this below, primarily through the prism of teachers own perceptions of climate activism.

Teachers’ Perceptions of the Role of Activism in CJE: Challenges and Barriers

Teachers involved in this project had opted to undertake professional learning in LfS and, as such, had an active passion for and knowledge of a range of sustainability issues. Therefore, it was surprising that no teachers cited any climate action movements as being influential in shaping their knowledge of climate injustice. Unfortunately, our focus groups and interviews with teachers were conducted just before the Strike for Climate and XR movements erupted. Despite this, these teachers spoke articulately about their own teaching practice and their own understandings of the intersection of social injustice and climate change.

The importance of intrinsic motivation (children and young people ‘leading their own learning’) to the development of critical thinking skills was also widely recognised by the primary and secondary teachers with whom we spoke. In fact, there were many shared practices and ideas for education that were common to both activist and classroom spaces. For example, perspective taking through role play in fictional scenarios was something discussed by teachers and young activists alike. This was seen to be a useful pedagogical tool in contexts where children and young people came from different communities and social backgrounds, where teachers, like some activists, also recognised that agency to act on climate, and define what it means to act, is itself a justice issue. For example, in the following reflection Primary School teacher Jess reflects on the injustice that arises when agency to act is framed as ethical consumption in a sustainable marketplace:

[T]he children that are seen as slightly more privileged are able to carry out these things whereas, you know, the other children aren't, and it's not necessarily because they don't understand it or because they don't want to, they just don't have access to it in the same way that other people do, which is an injustice in a sense ... [U]ltimately it is about money I suppose. (Jess, Primary School Teacher)

Some teachers argued that for the concept of climate justice to resonate, it needs to be connected to analysis of the issues facing Scottish communities. Consider geography teacher John, who framed housing in Scotland as a domestic climate justice issue:

I think there needs to be an acknowledgement as well that... climate justice is at so many different levels. You know, take the West of Scotland's chronically damp housing that we are still not addressing, and that the poorest in our society here in Scotland are suffering the most from climate change, never mind when you start opening it up globally. (John, Secondary geography teacher)

Arguably, framing climate change education through a domestic social justice lens is useful precisely because it opens up space for critical dialogue on the relationship between structure and agency, and in doing so challenges the fallacy that the abstract acquisition of knowledge leads to action. Focusing our dialogues on social justice provoked some insightful teacher reflections on the importance of framing CJE in terms of a 'just transition' away from climate change exacerbating industries in order to avoid the disavowal of 'troubling knowledge', which accompanies a perceived lack of agency.

My family is from Bowness, which was a coal mining town, and from Campbelltown which was a fishing town ... [T]he coal mining industry obviously sort of like ended and that had a massive impact, if you look at like the suicide rates the drug abuse rates ... I think everyone who was involved in those industries realised that it had to go, but it's the steps towards it. You know, my granddad always said that he knew that

whaling was wrong, but what else was he going to do? (James, Secondary Science Teacher)

An important implication is that effective CJE ought to recognise that education, as the acquisition of propositional knowledge, is only effective up to the point when people run up against the messy contradictions between what they ‘know’ and the dominant ideologies shaping their experience of work and everyday life.

Despite many parallels between the ways in which activists and teachers discussed CJE, teachers were more ambivalent about the prospect of blurring the line between activism and education. Actively participating in local campaigns was evident as a common practice, particularly amongst the primary school teachers that we talked to: not necessarily ‘climate’ campaigns but taking local action on plastics, sustainable travel and pollution issues. However, there remained a certain disconnect between attitudes towards this kind of ‘safe’ local action and perceptions of the analyses, theories of change and visions of the future we might find in more radical climate justice movements. Despite the nuanced discussions that we had with teachers about climate injustice, many teachers were ambivalent about the prospect that knowledge produced through activism might serve as a curricular resource. These concerns fell into three broad categories: the institutional constraints on teachers’ agency; assumptions about the emotional resilience of children and young people; and fears about ideological bias, in particular that the knowledge claims produced by social movements are undermined by being emotive and overtly politicised.

Despite the opportunities for inter-disciplinary learning afforded through climate justice, teachers discussed the ways in which a lack of time negatively compounded with the complexity of the subject matter. For example, Caroline, a Religious, Moral and

Philosophical Studies (RMPS) teacher lamented that “climate activism is such a huge thing... there just isn't enough time, I just feel like I am always running out of time to explore these issues in any real meaningful way, which is why I probably do just hone in on smaller aspects to try and make at least some small difference” (Caroline, Secondary RMPS Teacher).

Teachers described how these pressures intensified as education progressed in secondary school, sharing how they felt ensnared in the contradictions of policy. Specifically, the contradictions between LfS’s radical intentions and the broader neoliberal framing of education as the individualised pursuit of competitive economic advantage through exam success.

Several teachers also aired their concerns about the emotional resilience of young people as it pertains to activism and to exploring climate injustice more generally, where they highlighted their personal concerns about inducing a state of fear or ‘ecophobia’ (Sobel 1999). For example, several teachers shared their concern about the long-term potential for experiences of failed activism to induce a sense of fatalism persisting into adulthood:

I love the passion that the children have – but see if you introduce them to [activism] and they get all riled up and they go and they do their big protest ... and nothing happens, do you then put them off activism for life? ... And I don’t know how you fix that but that’s I think something that we need to address.’ (Sarah, Primary School Teacher)

There also remains a certain stigma surrounding around the epistemic legitimacy of more radical forms of activism that undertake non-violent direct action that some teachers remained wary of:

[W]hen it comes to activism ... you have the worry almost when somebody says or does something like that, there's a level of passion involved which could blind them from the facts. (James, Secondary Science Teacher)

It is interesting to juxtapose these common and understandable concerns with the sophisticated analyses of climate injustice expressed by activists in our dialogues. Whilst there were commonalities in the way that activists and teachers discussed climate justice, there was an obvious gap between the depth of knowledge and critical discourse deployed by young activists and the teachers: young activists (and older activists) possessed a critical vocabulary that they were able to apply to speak more fluently and precisely about corporate power, neoliberalism, capitalism, colonialism and intersectional injustice. Learning collectively, and inter-generationally, they are heirs to a tradition of ‘really useful knowledge’, which is “critical and aligned to social action for change, as opposed to ‘merely useful knowledge’, which is technical and linked to individual interests and concerns” (Crowther 2012: no pagination). Since such analyses authentically inform and emerge from action, they travel between the language of systemic critique and a concern with mapping local machinations of power in order to challenge it. Thus, if the sentiment that young people are ‘leading the way’ is to be much more than deflection of generational responsibility and a cheap affirmation of youthful exuberance, then educators—from primary to tertiary level—must recognise that young activists have much to teach them, both about climate justice and the place of education in addressing it.

Nevertheless, even where teachers are sympathetic to the analyses of these emerging movements, and even though they work under a fairly ‘radical’ policy architecture of LfS, many of them still clearly experience the pressures of performativity bearing down on them

(Ball 2003). In this context, it becomes obvious why it is easier to not engage at all rather than risk doing it badly. In this context, we must return to the notion expressed by activist participants that education change is an extension of system change. It was notable that many activists with whom we spoke were aware of and sympathetic towards the challenges faced by teachers. They recognised that radical and authentic CJE, which engages with emerging currents of thought from climate action movements is not possible without simultaneously challenging exploitative and managerialist working conditions. Taken together, this offers a snapshot of the challenges and opportunities for developing a social justice-oriented approach to 'prioritising the climate crisis in education', which is one of the key demands of the Scottish Youth Climate Strike.

Conclusion

In concluding, it is important to re-state that the research here is part of a longer-term commitment to develop CJE by creating interfaces for activists and educators to co-construct knowledge together, working between the spaces of social movement learning and the radical potential, if not reality, of LfS policy. We have explored activists' and educators' understandings of climate justice, with a particular focus on agency itself as a justice issue. The sheer breadth and diversity of these discussions reinforced our belief that climate justice is a contested discourse and, as such, ought to be explored through education rather than simply assumed.

Overall, activists understood education to be an extension of system change. Their vision of CJE was one which was often explicitly decolonial, feminist and anti-capitalist. They recognised agency and the politics of knowledge production as climate justice issues and attempted to prefigure different approaches to education and knowledge production through

participatory democracy. In critique, we argue that the lens of social justice must be central to the critical reflective praxis of the global Climate Strike and XR movements, as they continue to draw criticism for practices that reflect their predominantly middle-class and predominantly white privilege, particularly, but not limited to, the glorification of arrest (Akek 2019; Yusuf 2019).

Our activist respondents also recognised the potential for CJE which is connected to social movements (especially youth-led movements), local communities, and addresses the affective dimensions of the climate crisis. Although our teacher participants shared some of the analyses of the activists, they were less well informed about climate justice and were more ambivalent about the prospect of learning through and from activism. We grouped these concerns into three broad categories: institutional constraints on teachers' agency; assumptions about the emotional resilience of children and young people; and fears about ideological bias, in particular that the knowledge claims produced by social movements are undermined by being emotive and overtly politicised.

From all of this we draw two tentative conclusions, which will inform further work to develop CJE. Firstly, we would like to work with pre-service teachers in order to develop greater awareness of the importance of ideological analysis in CJE and in LfS, more generally. It is important that educators themselves develop ideological analysis skills and a greater awareness of how their own ideological assumptions shape their own affective responses to the climate emergency and to climate activism. Arguably, there is no 'natural' or 'objective' rendering of the social problems and solutions associated with the unfolding climate crisis. An important implication for CJE is that the emphasis on addressing 'wicked problems' in LfS must be accompanied by a willingness to step back and question the "unexamined assumptions and deep-seated conceptual logics within implicit problem

representations” (Bacchi 2012: 22). Climate justice itself is heterogeneous, since conceptions of justice differ according to one’s ideological position. We think it is important to explore this complexity because we remain convinced that justice is the bridge between knowledge and action that is so often elusive in climate change education.

Secondly, if LfS is truly committed to pedagogical practices that are open-ended, complex and messy (as it claims to be), then addressing how climate (in)justice is prioritised in education ought to be a matter of collective deliberation between educators, activists and communities who actually stand to experience injustice. For us, this means that we would like to create interfaces for productive and critical dialogue which are mutually educative for activists and educators alike. It is important that educators are supported to seek to develop an understanding and appreciation of the historical significance of social movements in generating knowledge claims relating to environmental and climate justice. It is also important that educators develop an awareness and appreciation of the ways in which conflicts and contradictions highlighted by contemporary movements provide a rich vein of curriculum, even if it is not always readily understood in such terms (McGregor et al, 2019). Finally, if we do understand education reform as an extension of system change then such dialogical spaces are also necessary in order for activists to appreciate and understand the institutional pressures bearing down on teachers, the policy contradictions they have to navigate, and their justifiable fears about the emotional resilience of the children and young people they educate.

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References

Akek, A. (2019, October 19th). When I look at Extinction Rebellion, all I see is white faces. That has to change. *The Guardian*. Retrieved from:

<https://www.theguardian.com/commentisfree/2019/oct/19/extinction-rebellion-white-faces-diversity>

Arruza, C., Bhattacharya, T., & Fraser, N. (2019). *Feminism for the 99%: A Manifesto*. London, UK: Verso.

Bacchi, C. (2012). Introducing the 'what's the problem represented to be' approach. In A. Blestas & C. Beasley (Eds.), *Engaging with Carol Bacchi: Strategic Interventions and Exchanges* (pp. 21-24). Adelaide: University of Adelaide Press.

Ball, S. (2003). The teacher's soul and the terrors of performativity. *Journal of Education Policy*, 18(2), 215-228.

Bond, P. & Dorsey, M. (2010). Anatomies of environmental knowledge and resistance: Diverse climate justice movements and waning eco-neoliberalism, *Journal of Australian Political Economy*, 66, 286-316.

Boran, I. (2019). On inquiry into climate justice. In J. Taseen (Ed.), *Routledge Handbook of Climate Justice* (pp.26-41). London: Routledge Earthscan.

Crowther, J. (2012). 'Really useful knowledge' or 'merely useful' lifelong learning? In D. Aspen (Ed.), *Second handbook of lifelong learning. Springer international handbooks of education, volume 26* (pp.801-811). Netherlands: Springer.

Crowther, J. & Martin, I. (2010, July 6-8th). Messy learning? Legitimate peripheral participation in a community campaign. Paper presented at 40th Annual SCUTREA Conference, Coventry. <http://www.leeds.ac.uk/educol/documents/191529.pdf>

Eyerman, R. & Jamison, A. (1991). *Social Movements: A cognitive approach*. Cambridge: Polity Press.

Gobby, J. & Gareau, K. (2019). Understanding the crises, uncovering the root causes and envisioning the world(s) we want: Conversations within the anti-pipeline movements in Canada. In J. Taseen (Ed.), *Routledge Handbook of Climate Justice* (pp.449-464). London: Routledge Earthscan.

Higgins, P. & Christie, B. (2018). Learning for Sustainability. In T. Bryce, W. Humes, D. Gillies and A. Kennedy (Eds.), *Scottish Education (5th edition)*, (pp. 554-565) Edinburgh: Edinburgh University Press.

Jafry, T, Mattar, S & Mikulewicz, M (eds) 2020, Proceedings of the World Forum on Climate Justice: 19th-21st June 2019. Glasgow Caledonian University.

Jamison, A. (2001). *The Making of Green Knowledge, Environmental Politics and Cultural Transformation*. Cambridge: Cambridge University Press.

Jamison, A. (2010). Climate change knowledge and social movement theory. *Wiley Interdisciplinary Reviews*, 1, 811-823.

Jickling, B. (2017). Education Revisited: Creating Educational Experiences that are Held, Felt and Disruptive. In B. Jickling and S. Sterling (Ed.), *Post-sustainability and Environmental Education*. (pp.15-30). Switzerland: Palgrave Macmillan.

Klinsky, S. (2019). Beyond the academy: Reflecting on public scholarship about climate justice. In *Routledge Handbook of Climate Justice*, In J. Taseen (Ed.), *Routledge Handbook of Climate Justice* (pp.467-478). London: Routledge Earthscan.

Learning for Sustainability National Implementation Group (2016). *Vision 2030+: Concluding Report of the Learning for Sustainability National Implementation Group*. Education Scotland. Retrieved from: <https://education.gov.scot/improvement/Documents/res1-vision-2030.pdf>

Lister, R. (2004). A politics of recognition and respect: involving people with experience of poverty in decision making that affects their lives. In J. Andersen & B. Slim (Eds.), *The Politics of Inclusion and Empowerment* (pp.116-138). Hampshire: Palgrave Macmillan.

Lohmann, L. (2005). Marketing and making carbon dumps: Commodification, calculation and counterfactuals in climate change mitigation. *Science as Culture*, 203-235.

Lohman, L. (2008). Carbon Trading, climate justice and the production of ignorance: Ten examples. *Development*, 51, 359-365.

Martinez-Alier, J. (2014). The environmentalism of the poor. *Geoforum*, 54, 239-241.

McGregor, C., Scandrett, E., Christie, B., & Crowther, J. (2019). Climate justice education: From social movement learning to schooling. In J. Taseen (Ed.), *Routledge Handbook of Climate Justice* (pp.494-508). London: Routledge Earthscan.

Nairn, K. (2019). Learning from young people engaged in climate activism: The potential of collectivising despair and hope. *Young*, 27(5): 435-450.

Revell, P. & Dinnie, E. (2020). Community resilience and narratives of community empowerment in Scotland. *Community Development Journal*, 55(2): 218-236.

Scandrett, E. (2016). Climate justice: Contested discourse and social transformation. *International Journal of Climate Change Strategies and Management*. 8(4): 477-487.

Schlosberg, D. & Collins, L. (2014). From environmental to climate justice: climate change and the discourse of environmental justice. *WIREs Climate Change*. 5: 359-374.

Selby, D. (2010). "Go, go, go, said the bird." Sustainability-related education in interesting times. In F. Kagawa & D. Selby (Eds.), *Education and climate change* (pp. 35-54). New York, NY: Routledge.

Selby, D. (2015). Thoughts from a darkened corner: Transformative learning in a gathering storm. In D. Selby & F. Kagawa (Eds.), *Sustainability frontiers* (pp. 21-41). Toronto, ON: Barbara Budrich

Selby, D., & Kagawa, F. (2010). Runaway climate change as challenge to the 'closing circle' of education for sustainable development. *Journal of Education for Sustainable Development*, 4(1), 37-50.

Sobel, D. (1999). Beyond Ecophobia: Reclaiming the Heart in Nature Education. *Nature Study*. 49 (3-4): 4-12.

Stapleton, S. (2019). A case for climate justice in education: American youth connecting to intragenerational climate injustice in Bangladesh. *Environmental Education Research*, 25(5): 732-750.

Sterling, S. (2010-2011). Transformative learning and sustainability: Sketching the conceptual ground. *Learning and Teaching in Higher Education*, 5, 17-33

Sterling, S. (2017). Assuming the future: Repurposing education in a volatile age. In B. Jickling & S. Sterling (Eds.), *Post-sustainability and Environmental Education: Remaking Education for the Future* (pp. 31–45). Switzerland: Palgrave Macmillan.

Tagg, N. & Jafry, T. (2018). Engaging young children with climate change and climate justice. *Research for All*. 2(1): 34-42.

Tokar, B. (2019). On the evolution and continuing development of the climate justice movement. In J. Taseen (Ed.), *Routledge Handbook of Climate Justice* (pp. 13-25). London: Routledge Earthscan.

Wals, A. (2010). Message in a bottle: Learning our way out of unsustainability. Inaugural lecture presented as UNESCO ESD Chair at Wageningen University. Wageningen, The Netherlands. Retrieved from <http://groundswellinternational.files.wordpress.com/2010/12/learning-our-way-out-of-unsustainability.pdf>

Whyte, K. (2019). Too late for indigenous climate justice: Ecological and relational tipping points. *WIREs Climate Change*, 11(1): 1-7.

Young, M. (2000). *Inclusion and democracy*. Oxford: Oxford University Press.

Yusuf, H. (2019). Climate activism failing to represent BAME groups, say campaigners. *BBC News*, Retrieved from: <https://www.bbc.co.uk/news/uk-48373540>

Zald, M. (2000). Ideologically structured action: An enlarged agenda for social movement research. *Mobilisation: An International Journal*. 5(1): 1-16.