**The role of schools and teachers in nurturing and responding to climate crisis activism**

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**Abstract**

This viewpoint concerns the places and spaces for youth participation in climate activism in formal education and considers what is - and what ought to be - the role of schools and teachers in nurturing and responding to climate crisis activism. Reflecting on our work on young people’s perspectives of hydraulic fracturing (‘fracking’) and associated anti-fracking protests, we consider some of the barriers to climate activism in formal educational spaces associated with petro-pedagogy. Finally, we outline the contribution of research in children’s geographies and education to counter regimes of obstruction to climate activism in schools, considering its relevance to young people’s participation in decision-making, educational policy, and practice.

**Keywords:** fracking, climate crisis, schools, education, protest, petro-pedagogy

**Introduction**

Over the past decade, the north west of England has been the site for protest and activism in response to exploratory fracking. Tensions were particularly high after the Secretary of State for Communities and Local Government overturned the decision made by the local (county) council to reject a planning application for exploratory drilling on grounds of ‘national interest’ (Aczel, Makuch and Chibane, 2018), with young people feeling unheard in associated political processes (Dunlop, Atkinson and Turkenburg-van Diepen, 2020). The voices of youth in relation to energy interventions - such as unconventional shale gas extraction - are absent in policy reports, so perhaps it is not surprising that formal political processes are failing to represent young people’s interests, and that the democratic deficit they and their communities experience results in protests. More recently, youth climate strikes have taken place across the region, supported by anti-fracking protesters. These two separate, but connected, protest movements demonstrate widespread dissatisfaction with the current reliance on fossil fuels, particularly amongst young people.

Education has a key role to play in preparing young people to be able to make informed, intelligent choices and decisions leading to the public good (Dewey, 1916). This includes education about issues that are simultaneously local and global in nature, such as those pertaining to energy, climate change and political activism. However fracking, along with other climate-related interventions such as geoengineering, is absent from English curriculum documentation despite the intergenerational consequences of such interventions. Indeed, a recent analysis of UK environmental education policy (Glackin and King, 2019) found that learning tended to be positioned *about* the environment, rather than *for* the environment. There is little time or space in schools to interrogate complex, controversial local issues which extend across traditional school subject boundaries, and where there is a great deal of uncertainty about the consequences of such issues. Analysis of current education policy and practice with reference to regimes of obstruction associated with petro-pedagogy (Eaton & Day, 2020) reveals significant challenges to schools and teachers in supporting climate crisis activism.

Support for climate activism in schools might take a range of forms, and use ‘soft’ or critical approaches depending on the nature of the issue, how it is conceived, grounds for action, understandings of what needs to change and why, and what the role is for ordinary individuals (Andreotti, 2014). Support for activism might include creating situations for developing the knowledge and skills needed to respond to situations, nurturing learning environments where all views can be expressed and challenged, promoting more dialogic, participatory and deliberative approaches to education and adopting investigative problem-solving approaches to environmental education. It might also include demonstrations of solidarity for activism. Support might be considered ‘soft’ where it focuses on awareness-raising or individualises problems and solutions, and ‘critical’ where structures which cause injustices are identified as part of the problem, where there is engagement with difference, complexity and power relations and where everyone is seen as part of the problem and part of the solution (Andreotti, 2014). In this viewpoint, we examine the disconnect between education and the geographies of young people based on our observations of fracking education in the communities most affected. We ask what the sources of obstruction to climate activism are in schools and suggest priorities for research and practice which are needed to nurture and respond to the climate crisis.

This viewpoint stems out of work speaking to young people and teachers about their experiences of fracking, associated education and anti-fracking protests. As educational researchers, our interest in young people’s knowledge and beliefs about fracking led us into considerations of youth, space, place and protest which young people saw as important. We found complex responses to anti-fracking protest, with young people seeing protest as a last resort, favouring more formal mechanisms of political participation which act within existing systems to bring about change. Whilst educational research can help us to understand the structure of schooling, and to critically examine the influences of teaching and learning on young people, children’s geographies reminds us that schools are places where climate activism happens (or not) and foregrounds the importance of listening to children’s voices and understanding children’s agency. It is important to bring together these ideas of location, policy and power with those of teaching and learning in order to ensure that education prepares young people to live in and shape the world they inherit.

**Regimes of obstruction to climate activism in schools**

Schools are physical sites on which young people from a shared geographical location converge, and as such are shared spaces for communities. Schools are not just buildings but places of security, belonging and social affiliation which go to the core of a person’s identity (Koller and Farley, 2019). School life for young people is connected to life outside, and relations and processes in schools are dependent on the surrounding society (Gustafson, 2011). Schools are places where young people and their teachers learn, develop and form identities, including local identities; and where they can be encouraged to share, encounter and challenge perspectives which can then be critically reflected upon and refined. Schools “must present situations where problems are relevant to the problems of living together, and where observation and information are calculated to develop social insight and interest” (Dewey, 1916, p. 226). In sites where fracking or other extractive industries operate there is a need for greater critical engagement with place and power, to hold industries and government to account for impacts on local people and the environment, and to effect change, as well as to understand how different positions in response to fracking arise within a community. This requires an understanding of science, politics, economics and geography as well as critical information literacy. However, in our research with young people and teachers near fracking sites, we have found an absence of fracking in upper high school education and an avoidance of politics in the classroom. These absences can be understood with reference to petro-pedagogy.

The term ‘petro-pedagogy’ describes teaching practices and resources which promote the interests of the fossil fuel industry (Eaton & Day, 2020). Eaton and Day identified how petro-pedagogy was found in energy and climate change education in Saskatchewan, Canada. Petro-pedagogy promotes values and behaviours which obstruct young people from understanding or challenging the role of corporate power in the climate crisis. Approaches include the identification of a range of stakeholders and their views, the inference that no stakeholder should have priority over the others, connected to an insistence on balance, and individualising possible actions in response to the climate crisis. Teaching for ‘balance’ (rather than outlining the best available evidence or arguments) for example can fuel the idea that all positions should be valued equally, which can lead to apathy and indifference. In our work with science teachers we have found the insistence on balance and representing industry (amongst other) positions as both achievable and desirable. Tannock (2020) extends the idea of petro-pedagogy to argue that it is not only about promoting fossil fuel industry interests, but also about promoting pro-corporate, neoliberal values, which threatens action to respond to the climate crisis. Here, we identify broader ways in which regimes of obstruction to climate justice are found in English schools.

***Absences, accountability and risk***

Schools are sites of policy enactment and the English policy context can be interpreted as obstructing climate activism when policies relating to what is taught (the curriculum) and to the behaviour and attitudes expected from teachers (the teachers’ standards) are examined in light of recent environmental protests. There are few references to greenhouse gases or climate change at age 11-16 in the English curriculum (Department for Education, 2014), and no references to fracking despite the growing demand from young people for both climate action and climate education (UK Student Climate Network, 2020). Local issues such as exploratory fracking and new mines for gold and polyhalite do not fit neatly on English examination-orientated curricula and assessments. Whilst the national curriculum represents a minimum expectation, teachers are unlikely to be able to create space for dialogue and deliberation about complex, controversial local issues in a content-heavy curriculum, especially at age 14+ where high stakes public examinations become a priority. Indeed, teachers working in communities affected by exploratory fracking have described the environment as ‘a footnote’ to science education, with assessable ‘facts’ rather than issues worthy of debate and contestation prioritised - and expected to be so by school leaders, young people and parents.

Accountability regimes (such as high stakes inspection frameworks, league tables and performance-related pay) which exist in many contexts tie student outcomes in standardised assessments based on a national curriculum to measurable and measured outcomes for schools and teachers. In England, the examination results of young people are used to determine inspection outcomes and league table positions, and in some schools, teachers’ pay. This squeezes out space for going beyond the assessed curriculum (and particularly for using time-consuming pedagogies such as modelling government processes, simulating special committees, working as a community of inquiry, and exploring questions and topics of interest to young people rather than those demanded by the curriculum) and limits the extent to which young people can form evidence-informed decisions about the extractive industries on their doorstep and work out the boundaries of their position on these issues. The focus on outcomes is indicative of a narrow conception of what education is, which dampens visions of what could be achieved through education, currently too excessively focused on the transmission of knowledge at the expense of educating for critical engagement. Absence and avoidance of controversial issues such as fracking from public (including educational) discourse tend towards depoliticisation of the issue, rendering it invisible and not up for question.

Another factor which renders political and controversial environmental issues invisible is the fear individual teachers may have in relation to taking risks in the classroom. Teachers have been reported to avoid teaching controversial issues because of their potential to lead to inflammatory discourse and the risk of losing control over the classroom (Grund and Brock, 2020). Teachers have also been found to avoid dealing with controversies because they don’t want to be insensitive to individuals with different views, and because they are concerned about how the wider community - parents and other influential bodies such as schools, the church and the school inspectorate - might respond to controversial issues in the classroom (Dunlop and Veneu, 2019). In England, this fear is reinforced by norms associated with standards and safeguarding.

***Standards and safeguarding***

Two further policies relevant to the role of schools in England in climate crisis activism are the use of legal frameworks which outline what are seen as appropriate attitudes, values and behaviour for teachers in and outside the classroom, as prescribed in the Teachers’ Standards (Department for Education, 2011), and the use of legal action (including various orders and fines) to enforce school attendance (gov.uk, 2020). The teachers’ standards (through which teachers are regulated) state that teachers 'maintain high standards of ethics and behaviour, within and outside school, by...not undermining fundamental British values, including democracy, the rule of law...ensuring that personal beliefs are not expressed in ways which exploit pupils’ vulnerability or might lead them to break the law.” (p.14). These policies make support - particularly public support - for youth participation in anti-fracking protests and climate strikes risky for teachers. In doing so, it could be argued that they are failing to uphold the teachers’ standards, regardless of how such support might be safeguarding young people in the longer term by enabling them to take action to support the planet. Further, standards value obedience and compliance with (rather than participation in creating or shaping) school and wider educational policy, regardless of how desirable this is, or of its limitations. This poses a challenge for teachers who wish to support climate crisis activism, and for young people who want to take action. There is a need for a more expansive and critical perspective on standards and safeguarding. Stevens (2010) regards standards as a bucket-filling (i.e. transmissive) model of teacher development, which does not reflect the broader social or cultural context, calling instead for a critical approach which values not only learning, but unlearning and relearning for all those engaged in educational practice.

Schools are places where both teachers’ and young people’s identities and realities are produced and reproduced in the classroom and beyond. From the English context we can see that regimes of obstruction to climate crisis activism in schools operate at different levels (classroom, school, curriculum). There has to date been a focus on identification and critique of this obstruction associated with petro-pedagogy. This is a necessary but insufficient step in nurturing and responding to the climate crisis. In the following section we outline how research in children’s geographies and education can act to tackle regimes of obstruction.

**Responding to regimes of obstruction and nurturing climate crisis activism**

We have outlined how the current provision of climate change-related education is actively disrupted by petro-pedagogies (Eaton & Day, 2020; Tannock, 2020) and policies and practices which determine what is seen as appropriate for teachers and young people in school settings. How can we make spaces for nurturing climate activism in schools? What contribution can research in children’s geographies make to climate crisis education, activism and practice? We consider three main avenues of activity: participation, policy and pedagogy.

*Participation*

A necessary condition for ensuring that the decisions made by those in power reflect the values, needs and concerns of all, is the participation of citizens, including youth. Our work with young people in schools and colleges near fracking sites has found that ‘dutiful’ dissent is favoured over other more disruptive forms of dissent, with a lack of clarity on the legality of protests existing amongst young people, exacerbated by how the media portrays protests and the policing of protests. There is an important role for schools here to play in drawing attention to, and reflecting on the strengths and limitations of different forms of political participation. However, place and power cannot just be taught: it must be experienced. Hart’s ladder of children’s participation can be used by teachers and/or school leadership to reflect on the ways in which children, can participate in programmes or projects, and to characterise child-adult relations in these (Hart, 2008). This ladder can prompt schools to reflect more broadly about how others (teachers, governors, parents) are involved in decision-making. Hart describes different levels of competence and confidence in participation, from manipulation, decoration and tokenism (seen as non-participation) to different degrees of participation: assigned but informed; consulted and informed; adult-initiated with children sharing in decision making; child initiated and directed; and child-initiated with decision-making shared with adults (Hart, 1992). Notably, the highest degree of participation according to Hart (2008) is where children and adults participate together in issues involving each other, as fellow citizens. This form of participation is present in some ‘democratic’ schools such as Summerhill (Neill, 2004) but is rarer in comprehensive state schools in England, which tend to have hierarchical management structures and lower levels of participation in decision-making (Wallace, 2002).

The Children’s Geographies literature has identified the need for involvement of young people - and perspectives of youth - in decision-making. In the north west of England, a moratorium on fracking was introduced in late 2019, albeit in response to seismic activity above the regulated levels, rather than the range of concerns of young people or the wider community which related to impacts on water and quality, the rural landscape and local economy, and health and safety. Percy-Smith (2010) has argued for a fundamental rethink of participation such that youth – and not just the organisations seeking their participation – benefit. This, according to Percy-Smith, requires greater attention to opportunities for fuller participation in everyday community settings including schools, which have the potential to be more inclusive than alternatives such as youth councils and young people's parliaments.

Finally, in relation to the participation of young people, evidence-based policy and calls to ‘follow the science’ have been heard over the past couple of decades. Research on public attitudes towards energy and environmental interventions needs also to make greater effort to include young people to ensure that the findings of social science include perspectives of children and youth. This requires additional layers of consent (for example from parents and school leaders), but studies which claim to report public responses to environmental interventions such as fracking, biofuels and geoengineering need to include the voices of youth, particularly because young people will be living with the consequences of decisions taken today.

*Policy*

The policies discussed above are set at a national level, and implemented in specific places, which are sites of dispute over energy and climate. There is a need to ensure that local needs are reflected in the school curriculum. Whilst the English curriculum needs reconfiguring if it is to act against climate obstruction, such a reconfiguration is unlikely given how regimes of climate obstruction function. New directions in curriculum policy that would enable climate activism include inclusion of youth priorities and local issues, where young people have some freedom to learn about topics which fit with the times as well as the local area, with greater emphasis on politics (learning about how power functions in these local contexts) and philosophy education (learning to identify and respond to questions about how best to live) which encourage young people to question assumptions about how they live their lives, and how to access and influence power. The challenge here is that such a change is likely to be seen as difficult to assess at scale using standardised tests, and therefore to be perceived as difficult to administer and potentially unfair.

An achievable aim in relation to the curriculum is to change how the curriculum is perceived and used by highlighting the curriculum as representing a minimum entitlement and demonstrating through research how teaching can be organised to create space for ideas beyond the curriculum. For example, by investigating the practice of teachers and schools who are able to go beyond the minimum (as many do), understanding how they prioritise, and how political and philosophical ideas can be integrated across the curriculum. There are examples from international contexts, for example the ‘STEPWISE’ programme in Canada (Bencze, 2017) which presents ways in which educators have radically changed their practice, and indeed their understanding of education, to promote activism for the wellbeing of individuals, societies and environments in formal education. Crucially, this work identifies ways in which teachers have negotiated existing power structures and the tensions that they continue to experience in their activism in formal education. This approach is connected to the role of pedagogy in building capacity to challenge power structures.

*Pedagogy*

Whilst teachers have limited influence over what is prescribed to be taught, where they do have influence over how it is taught. Approaches to teaching and learning in initial teacher education, as well as in classrooms, need to address the barriers to climate activism, i.e. to challenge the desirability of balance and inclusion of industry views. Education must prepare young people for the challenges that the climate crisis presents, and for the local, national and global consequences of this, and of mitigation strategies. This requires the articulation of tensions, challenges and controversies, and a space for resolving these. Currently there is limited space in formal education in England for political and controversial issues.

Research in environmental and sustainability education has offered pedagogical proposals which might have a role to play in supporting climate activism in formal settings: approaches based on the action competence approach and those based on critical pedagogy (Læssøe, 2016). The action competence approach (Jensen and Schnack, 1997; Jensen, 2004) requires knowledge or insight, commitment, vision and action experiences in response to authentic problems. In this approach, young people take action and try to influence ‘real life’ conditions such as traffic around school as part of their education. Whilst this approach enables young people to investigate and solve real problems, it does not necessarily involve the identification and critique of existing power structures and relationships. In contrast, critical pedagogy (Freire, 2017) promotes critical thinking about structures of power and decision making, and the examination of uncomfortable outcomes of existing relationships which benefit the few. Whilst critical approaches have been described as education *for* the environment (Læssøe, 2016), they can result in feelings of helplessness and guilt (Andreotti, 2014), particularly for teachers who may be responsible for upholding the very systems and structures such as the curriculum and teachers’ standards they seek to critique. It is therefore important to encourage critical engagement with potential solutions (for example, through consequence mapping), as well as focusing on problem-posing.

Teacher education and professional development programmes need to raise greater awareness of how petro-pedagogy obstructs climate activism. This is likely to be achieved not through transmissive approaches or critique of current practice, but through scenarios and case studies which provoke teachers to address thorny issues they might expect to face in practice. Scenarios can bring to attention taken-for-granted assumptions and the complexities behind educational decision-making. For example, the following vignette might be used to generate opportunities to explore and understand different perspectives and interpretations of policy and practice.

All teachers of 12-13 year old students were asked to lead a session on the climate crisis. As part of a school professional development programme, teachers were asked by the pastoral lead to reflect on their experiences of teaching the session. A group of three teachers had been asked by students about their views on the Climate Strikes. One teacher (A) explained that whilst personally supporting the climate strikes, they did not want to voice support during the session because of concerns about students missing too much school, and the impact this would have on attendance and attainment. Another teacher (B) had voiced support for the strike and for striking young people during the session followed by an explanation of how strikes work, noting that strikes need to be disruptive to work. Teacher B noted to the class that there was minimal disruption to people other than the striking young people - so if they really cared they should schedule strike action for a weekend. A third teacher (C) responded that Teacher B was wrong to voice support because the Teachers’ Standards requires teachers to uphold school policies and ethos and ensure teachers’ views are not expressed in ways that could lead young people to break the law.

* How would you have responded during the session with 12-13 year olds?
* Is that the same as how you would have wanted to respond? If not, why not?
* What are the likely consequences of your response? Are these desirable?
* What would you say or do now, if you were the school pastoral lead?

This vignette can be used to identify obstruction to climate crisis activism, and to think about how desirable outcomes can be achieved. It also allows teachers to problematise existing policy and practices. To change, regimes of obstruction need to be identified, and individuals need to reflect on their role in reinforcement or challenge.

Similarly, there is a need for more spaces in schools to elicit and explore young people’s ideas, and in so doing cultivate their capacities for considering alternative perspectives, evaluating the comparative strength of arguments and deliberating respectfully with one another. Pedagogical approaches need to be carefully considered for their appropriateness. In terms of challenging assumptions about the desirability of balance for example, debate - associated with winning and losing sides - might not challenge assumptions or prompt deep reflection on the issues in the real world, nor encourage modification of viewpoint in light of new information. Rather, real-life relatable scenarios or case studies and associated questions, discussion plans with probes and prompts or philosophy circles are more likely to allow space for a range of perspectives and for raising awareness of different ways of intervening in decision-making processes. For example, Philosophy for Children (Lipman, 2003; Lewis and Chandley, 2013) is an approach to education in philosophy which can be used across the curriculum, with any subject, and which encourages questioning and inquiry as a community in response to issues that young people want to discuss. This is just one model of increasing everyday participation in schools, not yet widely used across the curriculum in English high schools, but which allows young people to explore different perspectives on, and positionalities in relation to, local issues related to climate change. Through deliberation of both the content and process of philosophical inquiry, the principles on which decisions are made and societies are organised can be identified, critiqued, adhered to, adjusted or protested against, but for this to happen, young people and teachers must learn to communicate their ideas with: “[o]pen-mindedness, single-mindedness, sincerity, breadth of outlook, thoroughness, [and an] assumption of responsibility for developing the consequences of ideas which are accepted” (Dewey, 1916, p. 414). In other words, to be open to unfamiliar ideas; remain focused during discussions; be honest; mindful; critical; and willing to act on their beliefs.

Finally, in support of critical spaces in school for identifying and challenging regimes of obstruction associated with petro-pedagogy, there is a need for attention to how to make good arguments based on sound reasoning, and how to avoid errors in reasoning. This might include presenting and dissecting examples of fallacious arguments. For example, a former UK government representative one publicly stated: “You can be in favour of fixing climate change. Or you can be in favour of exploiting shale gas. But you can’t be in favour of both at the same time.” This presents a false dichotomy which seeks to do away with the possibility of being in favour of fracking under certain conditions (e.g. to replace coal, under strong regulatory regimes, along with accelerated development of renewables). This type of bad argument can be used to polarise positions and divide publics. Education has an important role to play in drawing attention to these tactics. Similarly, where spaces for dialogue are opened up, if a young person or teacher cites weak sources of information when, for example considering the desirability of fracking or anti-fracking protest, under supportive conditions, the class can challenge the sources of information and encourage more explicit articulation of what it is that they agree or disagree with in each others’ arguments, and the reasons for this. This requires the teacher to yield some of their authority to allow for greater youth agency in the classroom.

Schools that are positioned within close proximity of sites for fracking are therefore ideally suited to helping young people to understand and challenge what is happening and share ideas about whether it is desirable or not, and why, and what responses are possible and preferable.

**Conclusions**

In this viewpoint, we have drawn on localised examples to examine the role of teachers and schools in youth climate activism, and in particular to examine how regimes of obstruction function. Approaches to research and practice in children’s geographies and education are needed to give voice to young people’s perspectives on climate-relevant interventions and activism. This implies research and practice which challenges regimes of obstruction to climate activism, and within this, the space for young people to discuss local issues which are inextricably bound up in global debates about how nations - and the regions that they are comprised of - should balance their desire for economic growth, and the perceived security, prosperity and opportunities that accompany it, against the need to mitigate against climate change. Given that it is young people and future generations who will need to bear the brunt of learning how to cope with climate change-related challenges, they should be able to participate in, and reflect on, formal and non-formal political processes which determine geographically localised, but nationally and globally relevant collective responses to climate change.

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