Climate Change Education in Ireland: Emerging practice in a context of resistance

Introduction

On Friday 20th September 2019, thousands of children and young people from primary and post-primary schools across Ireland, as part of a wider global movement across 150 countries, staged collective protests seeking government action in the face of accelerating climate change (*Irish Times*, 2019). These protests highlighted young people's determination for climate action but also thrust into the spotlight those working within the Irish education system, with many teachers and school principals involved in the organisation, mediation and, in some cases, curtailment of student involvement in these climate protests. The question of whether, and if so how, the education sector should facilitate young people's involvement in climate action entered the public discussion.

Climate change has been defined as a 'wicked problem' necessitating complex and multi-faceted solutions (Incropera, 2015). Education is viewed as an integral part of this response, with the capacity to contribute towards mitigation of the causes of climate change as well as adaptation to its consequences (Selby and Kagawa, 2012; Mochizuki and Bryan, 2015). However, this educational space is also acknowledged as both complex and contested (Lehtonen, Salonen and Cantell, 2019), presenting educators with the challenge of addressing difficult knowledge in a politicised and, at times, divisive context. This chapter charts the shifting conceptualisations of Climate Change Education (CCE) within formal education in Ireland and elsewhere, from an individual to a necessarily collective concern, with a focus on children, teachers and policy makers. After exploration of current and emerging practices in CCE, the chapter considers the Irish policy context for CCE, including the underpinning ideologies and inherent contradictions. With reference to two case studies of high profile events which shape the Irish context for CCE and young people's climate action, the chapter examines the demands faced by teachers addressing the climate crisis and considers the challenges faced by children grappling with the complexity and emotion of climate change.

Past, current and emerging CCE practice

While early approaches to CCE focused predominantly on developing scientific knowledge of the processes underpinning climate change and its environmental consequences, there was growing awareness that scientific and environmental knowledge in itself did not

necessarily lead to pro-environmental attitudes and behaviour in children (Brownlee, Powell and Hallo, 2013) or adults (Dijkistra and Goedhart, 2012). More comprehensive approaches followed, particularly from the fields of Environmental Education (EE) and Education for Sustainable Development (ESD), as education was recognised as key to increasing climate change literacy and fostering behavioural changes (Mochizuki & Bryan, 2015; Waldron et al, 2016). ESD is seen as a holistic and learner-centred approach to education which is participatory, action oriented and potentially transformative (UNESCO, 2016). Adopted by UNESCO as an educational framework at the International Conference on Environmental Education in Thessaloniki in 1997, and promoted by the United Nations Decade of ESD (2005-2014), ESD gave an increased focus to climate change as a result of the Bonn Declaration arising from the 2009 UNESCO World Conference on ESD, which called for CCE to be placed higher on the international agenda (UNESCO, 2009). Long-standing critiques of ESD have argued that the term itself encompasses contradictions and ambiguities, leading to "definitional haziness" at policy level (Selby and Kagawa, 2010, p.38) and a failure to question dominant narratives of growth and consumerism (Selby and Kagawa, 2010; Hicks, 2014). Thus, ESD can support a wide range of practices, from those which promote individualised pro-environmental action to those which exhibit a more transformative intent.

From an Irish perspective, education addressing climate change focused historically on promoting pro-environmental citizenship, encouraging responsible environmental behaviour at individual and school level, rather than on system critique or collective political action. While the participation of young people in school-based decision-making and planning has been a strong characteristic of Irish environmental education practice, particularly through the Green Schools movement, actions tend to be conceptualised as local, personal and safe (Waldron, Ruane and Oberman, 2014; Waldron et al. 2016). Recent efforts to present more critical educational forms however, suggest that CCE, in the context of ESD, has a vital role to play in prompting the necessary "transformative shifts in how we think and act" (Mochizuki and Bryan, 2015, p. 4).

CCE has been defined as preparing young people "for a rapidly changing, uncertain, risky and possibly dangerous future" (Stevenson, Nicholls and Whitehouse, 2017). This recognition has led to a move away from a focus on 'rear view mirror' approaches (i.e. focusing on questions, problems and responses, as prevalent in the 1980s and 90s) (Selby and Kagawa, 2010) to encompass other dimensions of knowledge and ways of knowing. While current approaches to CCE include the two broad dimensions of mitigation and adaptation at both the

local and global level, these dimensions are viewed as complex and multi-faceted. CCE for mitigation focuses on the development of knowledge, skills and dispositions to identify the causes and consequences of climate change and to promote individual and collective action. CCE for adaptation, on the other hand, focuses on the knowledge and skills to manage current risks, reduce general vulnerability and prepare and respond to climate-related hazards, fostering an adaptive capacity to cope with the imminent impact of climate change (Selby and Kagawa, 2012; Mochizuki and Bryan, 2015; Stevenson, Nicholls and Whitehouse, 2017). This includes recognition of the differential impact of climate change within and across countries, the inverse relationship between culpability and vulnerability (in that historical responsibility for generating emissions lies in industrialised countries while those countries least responsible are most vulnerable), and the increased risk for those communities and individuals within countries who are marginalised and impoverished. CCE, then, is multi-dimensional and, to a large extent, open-ended. It encompasses approaches which address the emotional and aesthetic dimensions of climate change, enabling young people to deal with uncertainty and ambiguity, to understand that all things are connected, to reconnect with place and with the wonder, beauty and value of the natural world. Selby (2017), for example, argues for vernacular learning which enables learners to connect with the natural world through learning experiences that are "locally grounded" (p. 17). There is also an increasing recognition of the importance of enabling children to question the ideological and economic drivers of climate change and to understand issues relating to climate justice, including issues of migration and conflict, in ways that promote system-level thinking and collective action (Selby and Kagawa, 2015). Several studies advocate for approaches to CCE which are participatory, interdisciplinary and premised on creative modes of engagement, and which acknowledge the ethical, social and political dimensions of climate change. Such approaches promote critical thinking, engage with the emotional complexities of climate change and move away from top-down processes to listen to the voices of young people (Mochizuki and Bryan, 2015; Rousell and Cutter-Mackenzie-Knowles, 2019). The capacity for transformative models of CCE to take root in a state-governed education system, however, is dependent on a range of factors, including the preparedness of schools and teachers to embrace such approaches. It is important, then, to consider the policy environment which shapes teacher practice in Ireland.

Systemic forces and counter subversions within Irish educational policy

Since the 1960s, Irish educational policy has been framed predominantly by the needs of the economy, neglecting other more social and civic perspectives. This has led to an over-reliance on technical solutions and a focus on issues such as performativity (e.g. testing and target-setting), school infrastructure and top-down reform (Ball, 2003; Gaynor, 2016; Lynch, Grummell and Devine, 2012). Policy making in the context of Irish education has also been regarded as a-theoretical (O'Sullivan, 1989; Lynch et al., 2012), an approach which O'Sullivan (1989) viewed as problematic as it replaces principles rooted in social theory, with morally-loaded slogans. Consequently, contradictory slogans (e.g. 'sustainability' and 'economic growth') can coexist within the same educational policy, though these contestations can be masked (O'Sullivan, 1989). Furthermore, it is maintained that education policy in Ireland has been characterised by a drive towards consensus and a reluctance to disturb the status quo (Lynch et al., 2012). This is exemplified in the consultative approach taken to curricular reform, where consultation with a range of representative bodies, including teacher unions and employers' groups, makes compromise inevitable (Lynch et al., 2012).

Despite these tensions, aspects of curricula, at both primary and second level, can be viewed as open to more transformative conceptualisations of CCE. Since 1971, the primary curriculum, for example, has been characterised by a holistic, child-centred approach to teaching and learning, and a view of children as active agents in the construction of knowledge (Waldron, 2004), while recent curricular reform at post primary level has afforded increased recognition to active learning methodologies, and to the concepts of sustainability, well-being and student voice (NCCA, 2019). For example, statements of learning within the Framework for Junior Cycle (NCCA, 2015, p.12) include stipulations that students will "value what it means to be an active citizen with rights and responsibilities in local and wider contexts" and that students will "have the awareness, knowledge, skills, values and motivation to live sustainably". In addition, Aistear the curricular framework for early childhood education in Ireland, includes children's citizenship as a core principle (NCCA, 2009). Subsumed under the idea of 'sustainability', opportunities to integrate CCE were identified by a recent ESD audit conducted by the National Council for Curriculum and Assessment (NCCA, 2018) across Irish curricula at preschool, primary level (subjects such as History, Geography, Science and Social, Health and Personal Education) and post-primary level (Business Studies, Home Economics and Visual Art) (NCCA, 2018). However, while these characteristics suggest scope to integrate CCE into current practices, as yet, no mandatory CCE obligations exist. Indeed, the NCCA (2018) recognises that "the scope for addressing content related to specific

Sustainable Development Goals is largely dependent upon the professional capacity, interest and disposition of the teacher" (2018, p. 89).

Ireland's policy on CCE is part of a wider international framework which requires states to respond to climate change through education and offer policy supports to shape that response. Obligations arise from the Sustainable Development Goals and the UN Framework Convention on Climate Change (UNFCCC). CCE is also supported by international policy initiatives such as the OECD's (2018) Global Competence Framework and UNESCO's publications on Global Citizenship Education (2015) and ESD (2017). Such wider initiatives have been heavily critiqued from an educational perspective as lacking the transformative intent required to challenge the economic growth models which continue to drive climate change (Selby, 2017). The Irish National Strategy on Education for Sustainable Development (DES, 2014), launched as part of Our Sustainable Future (DECLG, 2012) is open to similar critique in terms of its framing of ESD and short fallings at the level of implementation. While there are some examples of more radical and critical programmes across the formal education sector, responses to them demonstrate the controversial nature of CCE and its potentially subversive status. For example, reactions to an educational resource produced by An Taisce (see Case Study 1), demonstrate the potential for CCE to unearth vested interests that the consensual approach in educational policy-making seeks to avoid. This case also highlights the resistance policy makers can encounter when seeking to enable teachers and students to address complex and critical questions related to sustainability, such as the political impetus towards economic growth. This results in significant contradictions within educational policy relating to climate change and, ultimately, a failure to provide a more critical, state-led approach to CCE.

The role of education within wider government climate action policy is increasingly recognised, though recommendations are underdeveloped (DCCAE, 2019; Joint Oireachtas Committee on Climate Action, 2019). Seventeen references are made to education in the Climate Action Plan (DCCAE, 2019), with the majority relating to the Energy in Education Programme or the role of education in supporting workers to develop new, future-oriented skills as part of a "just transition". A smaller number of references are made to teaching and learning opportunities, such as embedding climate science in the curriculum and supporting student activism. There are no references to more radical forms of CCE that necessitate an interrogation of current economic models, or justice-oriented mitigation strategies. Moreover, within the report from the Joint Oireachtas Committee on Climate Action, a singular focus on

the integration of CCE, and in particular climate science, into formal education curricula fails to recognise the significance of supporting the professional development of teachers and the need to address wider structural and contextual constraints that limit more progressive forms of CCE within formal education (NCCA, 2015).

Formal education has a crucial role to play in addressing the climate crisis and, increasingly, state policy in Ireland recognises this role. However, policy remains underdeveloped and characterised by the technical focus that underpins wider educational policy making in Ireland. Current policy responses overly rely on the integration of climate change into curricula, with little consideration for how that curriculum can or will be enacted in schools and classrooms. The next section considers teachers' role in this enactment, the demands on their professionalism and the wider context which shapes their educational practice.

Emerging issues for teachers

CCE places significant demands on teachers, requiring that they are competent in their understanding of climate science, skilful in their navigation of the emotional dimensions of CCE and confident in their capacities to engage with the contested nature of climate justice and climate action within their classrooms. At the heart of this response is the idea of professional agency i.e. the capacity of practitioners to act in particular situations, making sense of policies and of the multiple contextual factors that influence the process by which these policies are implemented. Agency is not a fixed capacity but rather an achievement resulting from the interplay of individual efforts and capabilities within contextual and structural factors in concrete situations (Biesta, Priestley, and Robinson, 2015). Thus, exploring professional agency is key to understanding how educational policies are translated into contextually-relevant teaching practices (Martínez Sainz, 2018) or, within the context of this chapter, how CCE policies become CCE practices.

Teachers are located within the schools and communities they serve and, given the lack of consensus on appropriate climate action, they may be practising in opposition to the perspectives of other community members. Studies have pointed towards teachers' reluctance to engage with issues that could be seen as controversial, fearing, among other things, a backlash from parents and charges of political indoctrination (Waldron et al., 2016). The controversy outlined in Case Study 1 suggests that such fears have some basis in reality. Despite the compelling evidence that a significant reduction in meat and dairy consumption is

required in order to meet climate targets (e.g. Poore and Nemecek, 2018), accusations of politicisation, or the promotion of unhealthy lifestyles, contribute to toxifying the context within which teachers make decisions about their CCE practice. Teachers' apprehension towards engaging with controversial issues may also centre on the complexity of such matters and the perceived appropriateness of challenging themes, particularly for younger children. As an existential threat stemming from an issue of complex science, climate change may represent difficult, discomforting knowledge for young learners. However, research has evidenced how learning about global issues, such as climate change, is possible in an early childhood context (Oberman et al., 2014). Barriers to educational practices, such as transformative models of CCE, often relate to teachers' personal understandings of climate change, the narrowness of their conceptualisations of CCE and their beliefs in what constitutes legitimate climate action for young people. In an Irish study, teachers and student teachers viewed climate change as primarily a geographical process, attending predominantly to local manifestations and showing limited awareness of global impact. While some teachers showed concern for intergenerational justice and the need to help vulnerable communities adapt, they displayed limited understanding of causality and of the depth of impact. Participants also focused on private individual actions as the most appropriate response (Waldron et al, 2016). Research elsewhere supports the idea that teachers struggle to consider beyond small, private and individualised actions, such as recycling, responsible consumption or diet (Aarnio-Linnanvuori, 2019).

While teachers' lack of competence and confidence is perceived to limit their engagement with global issues (e.g. Bryan and Bracken, 2011), teacher education in Ireland has made significant strides in supporting teachers to develop their knowledge and understanding of sustainability issues (Liddy, 2012) and the importance of robust CCE within teacher education is recognised (Mochizuki and Bryan, 2015; Waldron et al., 2016). Increasing opportunities for professional learning have been found to support teachers to develop their classroom practice for sustainability (e.g. Tarozzi and Mallon, 2019), with CCE programmes recognised as part of both initial and in-service teacher education provision in Ireland. Other support for those teachers seeking to address CCE within primary and post-primary schools include educational resources. While textbooks are recognised as a popular form of educational resource for teachers addressing global issues, variance in content is recognised (Bryan and Bracken, 2011), and measured criticism has been levelled at the content of some textbooks. After intervention from An Taisce, for example, a Folens' publication 'Unlocking Geography', was revised to provide a more accurate representation of the scientific consensus behind

anthropogenic climate change (RTÉ, 2016). Educational resources which support teachers to develop their pedagogical approaches to climate change have been developed in Ireland and elsewhere, providing frameworks for addressing climate justice and climate action, and helping teachers' to develop their own understanding of the field [see, for example, Creating Futures (Oberman, 2016); Sustainability Frontiers (2019); Climate Action: Teacher Resource (Ryan, 2019); Eco-Detectives (Pike, 2011)]. Such publications are themselves open to wider scrutiny (see Case Study 1) and whilst these publications offer support for teachers grappling with CCE, it is also recognised that one particular aspect of CCE remains underexplored - climate action (Selby, 2018).

Challenges faced by children and young people

Evidence suggests that, as a result of climate change, a reversal in the global improvements in child health and mortality can be expected in a short time (Phillipsborn and Chan, 2018). Faced with the existential threat of climate breakdown, children and young people from the Global South and across the planet have increasingly been recognised as actors within contemporary debates on climate change action. Media coverage of climate strikes has provided a rare public insight into the concerns of young people across the globe. The climate crisis has also permeated more formal spaces where the views of young people are shared. For example, Dáil na nÓg, the Irish national parliament for young people, identified climate change as one of the most important issues faced by the youth sector in Ireland (Comhairle na nÓg, 2019).

Faced with an uncertain and threatening future, the potential for children to experience emotional distress or eco-anxiety has been identified (Pikhala, 2017). Supporting children to explore such emotions is a critical part of CCE. Affifi and Christie (2018) argue that CCE needs to incorporate the reality of unsustainability and address the idea of loss, proposing a pedagogy that engages with death as a natural part of the natural world. The overwhelming nature of climate breakdown can provoke a sense of helplessness and lack of agency (Waldron et al., 2016) and educational approaches which are grounded in action have been suggested as a means by which young people may explore collective climate action without becoming lost in the complexity of an issue which can be perceived as insurmountable (Hicks, 2014).

Increasingly, academic research has focused on the views of children faced with these significant global challenges. Studies focused on educational interventions have begun to unearth the perspectives of children on their roles and responsibilities in relation to addressing

complex issues such as climate change (e.g. Ojala, 2012; Martínez Sainz, Oberman and Mallon, 2019), Given the capacity of younger children to engage with difficult global questions (Oberman et al., 2014), the voices of children within such research provide important insight. Laura, a twelve-year-old participant in a research project exploring the efficacy of a CCE resource, explains what she understands of the causes and consequences of climate change but also her desire for action:

> "Climate change is when the world is getting hotter, this is because all the carbon dioxide from vehicles and factories is polluting the air. This affects lots of people, animals and countries. Like bees, they pollinate the flowers and we could not live without them. I am trying to do more stuff to help and the people of the world should too" (Martínez Sainz, Oberman and Mallon, 2019)

While such comments cannot be generalised to all children, Laura's quote expresses her knowledge of the basics of climate science, her understanding of the social and environmental consequences of climate breakdown and her stated commitment to climate action. Alongside the voices of other young people, it highlights the significant shift in the exposure that climate change has received in young people's worlds. It also raises the question of how young people's climate action is understood - what should the people of the world, including children, do about climate change?

In an Irish context, and as illustrated in Case Study 2, while much of the public commentary on the climate strikes was supportive, questions were raised about children's capacity to take independent political action (Gleeson, 2019). For the most part, these questions came from outside of education, where ideas of children as social actors have increasingly taken hold. Supported by changing conceptions of children and childhood, which sees children as active agents in the construction of their worlds (e.g. James and James, 2012), and by the participation rights enshrined in the United Nations Convention on the Rights of the Child, the idea of children's agency, as noted earlier, has been integral to the development of educational policy and curricula in Ireland since at least the 1990s. While the charge of tokenism has been levelled at some of the consultative and representational structures that have emerged from these developments (McLoughlin, 2004; Fleming, 2017), recent shifts in policy and practice relating to young people have been more promising, such as the prioritisation of 'listening to and involving children and young people' as one of six national policy goals (DCYA, 2014). Earlier critiques of children's participation in schools, which saw it as corralled within safe inauthentic spaces (Waldron, 2004), has given way, in some cases, to the visible and public

support by schools and teachers of the right to protest. The idea, then, of children's capacities to engage in collective action, arising from their knowledge of the threat posed by the climate crisis and their perception of where the responsibility lies, is one that fits comfortably with current educational perspectives.

Conclusion

This chapter charted the evolution of CCE towards a multidimensional model which integrates climate science, global justice, collective citizenship action, addressing personal, social and environmental concerns, and which necessitates child-centred engagement with the concepts of uncertainty, ambiguity and hope. The chapter has offered an overview of some of the key challenges faced by young people growing up in an era of climate crisis, as they grapple with the complexity of climate science, whilst exploring the collective responsibility to act in light of the immediacy and injustice of climate breakdown. Climate change also presents significant challenges to teachers across the spectrum of experience. Whilst the opportunities to deepen professional understanding of climate change may be present, we recognise that teacher's professional agency is shaped by their surrounding environments, and that teachers must be supported to develop strong foundations for engagement with the necessarily interdisciplinary questions of climate action and justice in varied contexts.

When positioned as a part of coherent and coordinated governmental policy, educational policy addressing CCE, in a manner which does not privilege 'soft' apolitical approaches (Andreotti, 2006; Selby, 2017), can offer a valuable framework for educators to support the knowledge, understanding and collective action of children, young people and wider society. Ultimately, there is a need to consider our priorities in education, to prioritise the deeper capabilities, values and dispositions that are critical to children's current and future capacities to meet the political, social, emotional and ideological challenges ahead, such as the capacity to move beyond self-interest; to look beyond ourselves, individually and nationally and act in solidarity with people who are not like us; to recognise our shared humanity and believe in the equal worth and dignity of all people - in the words of Martha Nussbaum,

> "the capacity to see themselves as not simply citizens of some local region or group, but also, and above all, as human beings bound to all other human beings by ties of recognition and concern" (Nussbaum, 2002, p.38).

Case studies

1. **Climate Action Teacher Resource: Education or indoctrination?**

In April 2019, media reports in Ireland carried a story that the Irish Farmers' Association (IFA) had accused the government of distributing "propaganda" to schools (Donnelly, 2019; Pollak and Hutton, 2019) through the launch of a resource for teachers, that included references to "#MeatlessMondays" and how to "reduce the volume of meat and dairy consumed in school" (Ryan, 2018, p. 34). The resource was designed to support teachers to integrate CCE across the junior cycle curriculum and included a welcome letter from the Minister of Communications, Climate Action and the Environment (Ryan, 2018). One article carried the headline "Farmers fume over advice to reduce dairy and meat consumption" and reported:

> An educational guide issued to schools recommending a reduction in meat and dairy consumption has prompted an angry response from the farming sector demanding its immediate withdrawal … Its president Joe Healy dismissed the segment as "propaganda" and said dietary advice offered by An Taisce "crossed the line" (Hillard, 2019).

Deemed as pushing an anti-farmer agenda, some activities in the resource were characterised as direct indoctrination of children into a vegan lifestyle (Donnelly, 2019). In response, the Minister for Climate Action defended the resource, stating that its intended purpose was to stimulate discussion, reflection and debate. A spokesperson from the Department of Education and Skills distanced the department from the resource and stated that it was down to individual schools to select the materials they use to deliver the curriculum (*Irish Times*, 2019).

2. **Children and the Climate Strikes**

In Autumn of 2019, thousands of children from over 150 countries became involved in ongoing collective activism demanding government action against accelerating climate breakdown. These events received significant media attention, with considerable focus falling onto Greta Thunberg, a Swedish student who had begun protesting outside of the Swedish parliament. In her speech to the UN Climate Action Summit in New York on Monday 23rd November, Thunberg addressed the audience:

> "People are suffering. People are dying. Entire ecosystems are collapsing. We are in the beginning of a mass extinction. And all you can talk about is money and fairytales of eternal economic growth. How dare you!"

Despite considerable support for her actions, Thunberg was also exposed to criticism from those questioning a young persons' understanding of and perceived complicity in climate change. Bryan (2019) located the root of this criticism within ageism and sexism. Bryan suggests that this response stems from the challenge to self-interest that climate action represents, and the discomforting questions that young people such as Greta Thunberg raise about individual and collective complicity in the breakdown of the earth's climate.

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