Positioning Development Education and Climate Change Education at the Heart of Initial Teacher Education?

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"In the end we will conserve only what we love; we will love only what we understand; and we will understand only what we have been taught".

— Baba Dioum (1968)

Abstract: This article seeks to consider the place of development education (DE), including climate change education (CCE), in initial teacher education (ITE). The article focuses on a DE elective module for Professional Master of Education (PME) students which enables student teachers to learn and to teach about a variety of global justice topics including climate change. The methodology is based on two qualitative phases. Firstly, three focus groups were conducted, one with students, one with graduates and one with ITE pedagogy lecturers (not involved with the elective module). Secondly, a narrative account from one of the study's authors captures examples of practice and challenges when engaging with DE (including specifically CCE).

        The article provides evaluative reflection on the DE elective as well as insights into the translation of the student teachers learning into school-based practice. Focus group findings suggest that more general issues regarding ITE and school culture surrounding DE integration impact on the approach taken by student teachers to DE teaching in schools. The article goes on to examine the transition between an ITE experience which aims to support student teachers use of experiential and transformative pedagogical approaches to global justice issues - including climate change - and the broader ITE and school culture which may foster or inhibit such practice. Furthermore, the article discusses the need to embed CCE in a theoretical framework of care derived from sustainability literature in order to bring a clearer focus on the

intricate and interconnected knowledges and ways of knowing sustainability and DE. This article concludes by reaffirming the significant contribution of DE but suggests further gain might be made by engaging the broader ITE community and school context to nurture teachers' and pupils' love for the environment and enhance the lifelong journey of learning for global justice and sustainability.

Key words: Development Education; Climate Change Education; Initial Teacher Education; School Culture; Care and Sustainability; Transformative Learning.

Introduction
The need for educational responses to the global issue of climate change is well documented (O'Malley, 2015; Mochizuki and Bryan, 2015). Finding ways of moving beyond supporting individualised action, incentivised financial policies and 'technological fixes' is necessary for the deeper transformation required to address climate change (Mochizuki and Bryan, 2015; Mallon, 2015). The purpose of this article is to contextualise the place of DE in initial teacher education (ITE) in order to reflect on its value as an educational response to climate change. The article sets out the background and context of the study, examines the key concepts and literature underpinning the article in relation to DE, school culture and care, and presents the study methodology and findings. The article concludes with a discussion and reflexive evaluation of the study's key findings in relation to DE in ITE, particularly in relation to climate change education.

The main site of this study is an ITE programme in Ireland where DE is offered to student teachers as an elective module. This module has been provided, in slightly amended formats, since 2015, following the reconceptualisation of ITE from a one-year to two-year Professional Master of Education (PME) programme. It was informed by and adapted from models of ITE in global education elsewhere, including materials developed by the Development Education Research Centre (DERC) at University College London. The provision of the elective and a number of other DE initiatives

across the ITE programme are supported by the Ubuntu Network funded by Irish Aid. The format of the elective is a series of 12 x one hour lectures delivered over one academic semester.

The module is assessed by a group assignment in which students design and present a detailed methodology for teaching an aspect of DE within their curriculum areas. During the course of the elective the student teacher explores the cross-cutting topic of climate change through themes of social justice, equality, cultural and environmental concerns framed within the context of DE. The programme aims to equip student teachers with a critically reflective lens with which to consider DE practice and develop methodological approaches to integrate when teaching their subjects. The module aims and content recognise DE as embracing a number of global justice and sustainability issues, including the question of climate change. The student teachers select a specific focus with reference to the learning needs of their own (second level) students and the requirements of the curriculum for their collaborative assignment work where they take ownership for working with DE concepts in their teaching practice. The article explores to what extent this module translates into DE practices and activities in classrooms and schools. It aims to articulate the possibilities, and highlight the challenges, which may contribute to or hinder the translation of DE in ITE to schools and classrooms.

Development Education and Climate Change Education

DE is defined by Irish Aid's (2017: 6) Development Education strategy (2017-2023) as a 'lifelong educational process which aims to increase public awareness and understanding of the rapidly changing, interdependent and unequal world in which we live'. The research literature and national and international policy distinguish numerous related terms such as global education, global citizenship education (GCE) and education for sustainable development (ESD) which may have distinct theoretical and practical orientations (Andreotti, 2016) but share common pedagogical approaches, ideologies and, often, content (Hogan and Tormey, 2008). Central to all approaches is highlighting the complexity of both the interrelated nature of the world in which we live and of the DE process (Baily, O'Flaherty and Hogan,

2017) which integrate the development of awareness, understanding, agency and action.

The United Nations (UN) Sustainable Development Goals (SDGs) clearly specify a global imperative for development education, particularly in relation to SDG 4 'quality education' and SDG 13 'climate action' which identify a need to develop knowledge, skills and cultures which contribute to sustainable development (UNESCO, 2015). The urgency of this imperative is further emphasised by Global Education Network Europe (GENE), an organisation which places global education at the centre of the educational endeavour and includes tackling issues such as climate change (Nygaard and Wegimont, 2019). While DE is an essential tool in relation to climate action (UNICEF, 2012), it is largely underutilised in the education sector (Mochizuki and Bryan, 2015) with DE content often a marginal and non-compulsory part of the broader curriculum both in the school curriculum (Bryan and Bracken, 2011) and in the focus area for this article, Initial Teacher Education (ITE) (Mallon, 2015).

Transformative learning for care and sustainability
In a context where people feel more and more disconnected from the natural world, the relationship between humans and their environment needs support (Berry, 2001; Schultz, 2000). Schultz (2000) suggests that feelings of love and care for the environment can be developed though experiences that give people a chance to feel connected to it, helping develop empathy towards the environment. At the heart of this DE endeavour is the notion of care. Understandings of love and care in education settings are often explicit in referring to the interpersonal relationships, but more often care for the environment, both the natural and human world is omitted or implicit. Noddings suggests that care is at the heart of human life and flourishing and its development should be viewed as 'the primary aim of every educational effort' (1984: 172). Freire suggests that education has to exist in the context of a profound love for the world (1990). Martin (2007) presents challenges to using general conceptions of care and suggests drawing on an ethic of care from sustainability and ecological literature is more useful in providing a

conceptual framework, with a clearer focus, in order to construct pedagogy and practical implications in education *for* environmental education and the development of a relational self.

Indigenous epistemologies, for example, are conceptualised by inter-relationships and nature experience (Singleton, 2015). These ways of thinking are considered transformative as they encompass critical reflection, emotional engagement and relational knowing (Taylor, 2007). The theory of transformative learning also goes beyond epistemological worldview change to an ontological process of a change in being in the world. Transformative learning requires reflective, independent, active learners and children have often in the past been considered to be dependent, passive learners (Singleton, 2015).

There are however examples of practice in schools which adopt an ethic of care derived from sustainability. For example, Steiner Waldorf schools have been noted as 'attentive to the needs of sustainability and the environment since many years before these became issues recognized by mainstream education' (Ashley, 2005: 14). The holistic, head, hand and heart approach to learning is applied in Steiner Waldorf schools and the approach was introduced by Orr (1992) as a transformative approach to developing eco-literacy. Such schools can be described as having a school culture with a shared vision regarding their purpose and have collective buy-in regarding 'why it exists and what it must do and who it should serve' (MacNeil, Prater & Busch, 2009: 74). Opportunities which connect people with the environment are required and transformative pedagogical approaches can support the delivery of responses to the climate crisis which 'are enhanced by theories of learning which address the cognitive, psychological and affective factors affecting citizens' motivation to act in relation to climate change' (Mochizuki and Bryan, 2015: 11).

ITE, school culture and DE integration

The Irish post-primary educational context is challenging in relation to developing a culture of care. Irish educational policies have been criticised for focusing on the purpose of education as serving the economy, being grounded in Cartesian rationalism and Western scientific knowledge and being amplified by the rise of neoliberalism in a context of global capitalism (Lynch 2010; Lynch, Grummell and Devine, 2012). Gleeson (2010: 133) describes the impact of curriculum and practice in schools as 'the story we tell our children about the good life'. The impact of the examination culture – 'the points race'– in Irish education has long been to distort a focus on broad educational objectives to the narrow value of examination outcomes (Tolley, 1989). The message students are often receiving is that the higher the points, the better the job and financial prospects, and therefore the possibilities of achieving the 'good life'.

Hicks (2003) warns that such an approach is at odds with the need to work towards a more just and sustainable world. McGuinness (1998) emphasises how a culture of caring by teachers in schools increases the chances of creating an ethical teaching environment in order to 'help students to realise that "the good life" lies within each of us, not outside of us' (1998: 17). Facilitating emotional discovery is a challenging task for educators, it requires considerable commitment particularly when set alongside an education system focused on economic needs. A lack of emphasis on affective learning has impacts for DE and climate change education. As Lynch, Grummell and Devine (2012: 199) argue, a longstanding culture of 'carelessness' exists in education systems driven by economic needs which hinders the development of empathy in the learner, reducing their capacity to deal with complex global problems.

Development education in Initial Teacher Education

Teachers are critical to the enactment of curriculum and the development of school culture and therefore Initial Teacher Education (ITE) is a crucial moment to engage teachers as development educators. A number of studies offer insight into the effectiveness of interventions to embed DE in ITE

Ireland. In a study which explored student teacher engagement with DE interventions implemented within PME programmes across eight Irish Higher Education Institutions (HEI), including the institution concerned with this article, Baily, O'Flaherty and Hogan found that 'through engaging with DE interventions, the capacity of PME students to engage with development issues and integrate DE into their teaching has strengthened considerably' (2017: 199). O'Brien and Cotter (2018) conducted research on the 'Id Est' project (Integrating Development Education into Student Teacher Practice) in an Irish ITE context which involved a series of scaffolded workshops 'designed to support research with a strong social and cultural inclusion purpose' (2018: 74). They concluded from an investigation of how student teachers initially experience new critical research practices and identities that 'this journey significantly matters for both the student teacher and her/his young learners; but that it remains a journey' (2018: 73).

Similarly, Baily, O'Flaherty and Hogan note that 'more must be done with respect to strengthening student teachers' knowledge of development issues, embedding DE further within PME programmes, enhancing practical engagement with DE on School Placement and prioritising DE-related research and reflection (2017: 99). However, there are challenges to such a suggestion as Mallon (2015) found when introducing climate change education to DE, the overcrowded ITE programme is a constraint and 'creating opportunities for the action related learning remained an ongoing challenge' (2015: 143). This study explores the challenges and the opportunities of one such Irish ITE context.

Methodology

This study set out to contextualise the place of DE teaching and learning (including issues of climate change) in ITE and, in doing so, it aimed to capture the perceptions of students, graduates and pedagogy lecturers. It also incorporated a narrative account on the integration of the DE module in ITE. The methodology aimed to include a mixture of constructions from graduates and current students, pedagogy lecturers and a DE lecturer and to map out or 'explain more fully the richness and complexity of human behaviour by

studying it from more than one stand point' (Cohen et al 2000: 112). In order to do this the authors conducted a qualitative inquiry on the DE elective in two phases. The approach focused on 'building a complex, holistic picture, formed with words, reporting detailed views of informants' (Cresswell, 1994: 1). Phase one captured the student teacher, graduate and teacher educator perspective. Firstly, two focus groups were conducted, one with graduates of the ITE programme who had completed the DE elective (n= 5) and one student teacher focus group with students who had just completed the module but had not yet completed their overall ITE (n=5). In addition, a focus group with ITE pedagogy lecturers not involved with the elective module took place (n=5).

A focus group approach was chosen due to its high face validity (Kreugar, 2014) as well as allowing the exploration of participants' opinions in detail. Informed consent was obtained from all parties involved. Recruitment for the study was voluntary among students and graduates, who completed the DE elective, and ITE pedagogy lecturers. The focus groups were recorded using a digital recorder and later transcribed. The questions for the focus groups explored the participants' understanding and perceptions of DE, how or if completing the DE elective contributed to their understanding and how they integrate DE into teaching in their school. The focus group transcripts were analysed. Following the collection and transcription of the data, the data was coded to arrange it for interpretation into themes. The themes most aligned to the research questions are presented in the findings section.

The second phase of the study involved a narrative account and to delve into the complexity of both school and teacher education culture and its impact on climate change activism. One of the researchers conducted the narrative account phase to capture examples of good practice and challenges when engaging with DE in ITE. The narrative account was subsequently analysed to extract themes. The experience of researching about a programme with which the authors are involved, impacted on the research process in a number of ways. Narrative accounts are considered advantageous as they offer 'insight and understanding to a situation that can be highly complex with

specific cultural structures and conventions' (McCloskey, 2018: 45). However, this form of practitioner-led research offers challenges of bias when a deep reflective process is omitted. Stenhouse (cited in Hammersley, 1993) describes the role of the teacher as the researcher where theory is gradually built up from the examination of accumulated observations which could lead to mere generalisation. When conducting a narrative account, it is important to hunt assumptions and critically reflect on the content. In this case the narrative process is employed as an opportunity for objectivity and the application of reflexivity supported the task. The researcher's ability to be reflexive when dealing with the researched can add to the value of the data gained (Roberts, 2002; Elliott, 2005). The narrative account was coded thematically and the presentation of the narrative account themes are merged with the discussion of this article.

Findings

This section presents the key themes which emerged from phase 1 of the research study which included two focus groups with students (one past and one present) and a focus group with ITE pedagogy lecturers (not involved with the elective module).

Perceived importance of DE in ITE

All participants realised the importance of DE as a pedagogical approach towards creating more awareness and openness to new ideas for sustainability, reflective of Bourn's definition of DE as 'learning about how we can move toward a more sustainable society for all' (2005: 236). Integration of DE in school teaching through recent curricular changes focusing on real life relevance and problem-solving approach was also appreciated. For example:

> *"...Like even you look at the way the whole junior cert curriculum was kind of structured, it was structured into 3 strands which were economic, people and environment. And that's your 3 pillars of sustainability. You know so there's a lot of stuff that links over"* (Student graduate).

"...There's always something going on involving a topic of development education and sustainable development. And like because of how current and relevant it is, there's always something interesting to bring into the class, whether it be a resource or a topic to look at or something that's happening on the news recently. And I kind of got into education because I always had the idea that I wanted to do something where I felt I was helping somebody. And sustainable development is this idea of planning for the future. And that's one thing that always caught me about it is how we can live better, live better together and live better within our environment" (Student graduate).

The group of student teachers currently enrolled on the DE module expressed for the value of working with sustainability to be able to pass it to their students. Being able to connect their subjects to real life issues was perceived as satisfying.

"I think there's a lot more to being a teacher than conveying more information that needs to be".

"Development education is ... Being more than just a person who teaches the curriculum but helps students learn about the real world".

In fact, there is a tendency for participants to articulate a very broad view of what constitutes DE. They include a range of what might be considered issues of inclusion, e.g. lesbian, gay, bisexual, and transgender (LGBT) rights and anti-bullying, as local manifestations of the social justice questions that are at the heart of DE.

There was also a common consensus among pedagogy lecturers (who do not teach the DE module) that the topics of DE are deeply embedded and occur naturally in students' thinking which is the reason they do not really highlight these issues separately. They mentioned that these topics feature in

their own thinking as well and, thus, naturally influence their subject-specific lectures.

> *"I don't think I overtly touch on these issues, it's a bit more implicit. Because you think, especially with the younger people, like the community of students, that these issues are naturally part of their thinking. So, you don't feel you really need to kind of highlight these things. So, I think a lot of these issues would be just naturally integrated in my method of teaching both in the college and second level school teacher"* (Pedagogy lecturer).

> *"I've never seen myself as having any specific responsibility for it"* (Pedagogy lecturer).

Having said that, they also admitted that they themselves were not completely aware of the collaboration of DE with the teaching of their subject and, thus, expressed a desire to learn more.

> *"I actually signed up for today as I feel in some ways I have an awful lot to learn about sustainable development and development education. ... Because if I'm working with the next generation of teachers ... well therefore I have a responsibility to that. I would say I'm at the very, very beginning of a journey in relation to this"* (Pedagogy lecturer).

One of the participants (Pedagogy lecturer) shared that it was only when he attended a DE information lecture that he recognised how teaching maths can be connected to an awareness of social issues. He commented:

> *"I would have really failed to see the connection before but there was a couple of just really simple things like telling the story of the world through the powers of one… And all linked to social issues"* (Pedagogy lecturer).

While all participants recognised the importance of DE, there were varieties of rationale in evidence for its inclusion in teaching and in ITE; both extrinsic and intrinsic, and related to changing curriculum, to secondary school student need, to the needs of student teachers and to ethical responsibility to the world.

Role of schools in integrating DE for the achievement of SDGs

The important role of schools in embedding DE was unanimously agreed upon by all participants. Especially, for controversial issues where there can be several opinions that may lead to conflicts, schools were considered as the safe place for dialogue and building tolerance for all views.

> *"...if they're not addressed in schools then they're going to be emerging in the playground or in the sports field or in their part time jobs or whatever else that they're doing"* (Pedagogy lecturer).

Many of them discussed the efforts already taken by their schools in relation to broad issues of equality and social justice. For example,

> *"There's been a lot of anti-bullying campaigns and equality and things"* (Pedagogy lecturer).

> *"Yeah there's definitely a heightened awareness"* (Pedagogy lecturer).

> *"I work in a school where there is huge attention paid to social justice issues"* (Pedagogy lecturer).

However, not all the schools were reported as equally engaged in the promotion of DE. Factors such as school ethos and culture and lack of resources were attributed to limiting the inclusion of DE at school level. So, it remained a matter of luck for many student teachers to be placed in a school willing to promote DE. A participant shared:

"they've [the school] a very good record with development education… I am quite lucky with the school I landed in and one of the schools I was doing a placement" (Student graduate).

Challenges faced in DE integration

School ethos and culture

School ethos and culture, as discussed above, were identified as strong predictors for the inclusion of DE or more specifically for addressing particular social justice issues. For example, one participant mentioned zero involvement of her school in supporting LGBT students as it was considered completely at odds with the school's ethos. Another participant, on the other hand, discussed how her school had supported such topics by celebrating diversity week. Two teenage post-primary students who identified as LGBT educated teachers about their own experience in the school. She further described:

"And all the other teachers came out with a very different aspect, so that was really interesting. Yeah it was a really open school. It was like non-denominational stuff… And we also had like designated teachers who were there to be like mentors who the students could go to about issues and things like, so it was brilliant" (Student teacher).

Participants shared a common view that it was necessary for schools to be more open to recent developments in society and get more engaged with DE.

Restrictions imposed by position as a student teacher

Being a student teacher was seen as restricting the scope of engagement with DE during school placement. Various reasons emerged which included factors such as the school culture of supporting DE, and a lack of autonomy and awkwardness with raising delicate issues. For example, a student teacher shared the perspective that despite her willingness to take responsibility for DE, she had to leave it as her co-operating teacher did not give her that much

autonomy. Following are some examples of student teachers' responses to the hindrances encountered.

> *"Then it comes back to your position in the school. When you are just a student teacher there is nothing you can do"* (Student teacher).

> *"It can be hard on the student teacher as well if the school isn't already kind of on board with dev ed to kind of, because you don't want to feel that you're stepping on other teachers' toes"* (Student teacher).

> *"And you can't really do too much in a placement school for example get involved in what's already there… and it's very hard to implement things as a student and have a voice in a school as a student teacher as well"* (Student graduate).

Furthermore, student teachers seemed to conceive their role as someone who is expected to know everything about DE topics. Thus, when they receive unpredictable answers from students or something which they themselves might not be aware of, they described how they start doubting their own abilities and become anxious. Fear of dealing with controversies that may arise during strong debates was another reason reported for teachers' anxiety in regard to the teaching of controversial issues.

Concerns over performance grades

A recurrent issue expressed by student teachers was a threat to their performance grades. The group feared a decline in their grades if they experimented with DE topics particularly while on school placement. The perspective of the placement tutor with regard to DE was expressed as a major concern:

> *"...somebody is coming to see if I can talk about this this week because you don't know your placement tutor, you don't know how*

they're going to feel about it, they might take offence to you even talking about it" (Student teacher).

"You just want your grade for that day so it's more important to kind of play the safe card than to, I would definitely change everything about my lesson plan if I wasn't sure about my placement tutor would be happy with. If I didn't know I wouldn't chance it" (Student teacher).

"Do you want to risk your whole grade on that?" (Student teacher).

"You don't want to risk when you're in college, no" (Student teacher).

"Not now when I'm being graded, when you're fully qualified and you have your own students" (Student teacher).

Comments suggest that there is a lack of confidence that DE is valued within the school placement aspect of the PME programme and that it is not clearly integrated in the criteria by which students feel they are assessed.

Narrative account and discussion

This section includes both phase 2 of the data collection, the narrative account from one of the authors, and merges discussion on both phases of the study. The discussion addresses the possibilities, and highlights the challenges, which may contribute to or hinder the implementation of DE (including CCE) from ITE to schools.

DE in schools and ITE

Overall, the phase 1 findings document the perceived importance of DE by students, graduates and pedagogy lecturers but in practice challenges exist. Overall good practice is noted in schools that have committed to DE and phase 1 findings suggest this impact greatly on student teachers' engagement with DE topics. The impact of school culture surrounding DE can equally be a

barrier if DE is not supported explicitly in the school. Similarly, in the ITE setting, the narrative account refers to impact of stepping into a 'well-established elective' with support from some staff (narrative account). However, the narrative account draws similarly on the challenges of supporting DE in ITE:

> *"I've always found that support in the area of DE is easily found when you identify the people who believe deeply in the importance of DE teaching and learning. What is difficult however is the support I am requesting is often drawn from a place of goodwill. I would be much more comfortable knowing that DE was both part of a formal and informal initiative more explicitly stated in ITE policy and practice"* (Narrative account).

Possibly the 'carelessness' (Lynch, 2010) in the education sector and the marginal position of DE (Bryan and Bracken, 2011) have not helped position DE more centrally. However, it is evident from findings that a clear challenge when positioning DE topics is that there is a tendency to merge sustainability and DE issues with other inclusion issues. Their dynamics and positioning in schools are different and demonstrating a clearer distinction is important. A question raised for the DE elective course providers is why such merging is taking place. Reflecting on how the knowledge base for ITE DE is presented as a distinct topic requires consideration.

Findings from phase 1 shared a common view that schools should be more open to recent developments in society and get more engaged with DE. When reflecting on discussions during the DE module about climate change activity in schools the narrative account captures the various approaches student teachers were experiencing from school placement setting to school placement setting. Thus:

> *"Often the student teachers mentioned the positive engagement and impact of strikes in raising awareness and getting people talking but on occasion the student teachers described a 'bandwagon' effect*

which isn't encouraging pupils to learn about the reason for and purpose of the strikes" (Narrative account).

Caring about the environment: a concern at the heart of ITE and school culture

Confidence in addressing DE topics was highlighted as a challenge in phase 1 findings, which corresponds with the study by O'Brien and Cotter (2018: 80) which found that 'most student teachers appeared to hold the view that such work was best met by more advanced/experienced teachers'. What is encouraging, however, are the possibilities of progress that might be made by focusing on affective learning (including for CCE). Evidence suggests student teachers express a genuine care ethic (O'Brien and Cotter, 2018) and similarly, as one extract from this study's findings highlights, teachers do care about 'how we can live better, live better together and live better within our environment' (PME graduate). The dichotomy student teachers face when caring about such DE activities is challenging, with some student teachers wishing to engage fully with a 'broader view of their moral responsibilities as teachers but restricted by constraints' of their programme and their schools (O'Brien and Cotter, 2018). Findings suggest perceptions of assessment in ITE, particularly on school placement, hinders DE engagement and adds to the dilemma of DE integration in practice. Students perceived reluctance to jeopardise school placement with a DE focused lesson indicates a certain ambiguity of what is acceptable or not acceptable knowledge to be assessed.

Baba Dioum (1968) suggests: 'In the end we will conserve only what we love, we will love only what we understand, and we will understand only what we have been taught' (n. p.). So, what should we be teaching in ITE and schools to position DE (including climate change education) as a priority, perceived to be valuable and taught well? Mallon's (2015) study of CCE in ITE highlights the need to address gaps in understanding climate science as the foundation for a deeper analysis of global interconnections. Mochizuki and Bryan (2015: 14) suggest 'specialized traditional knowledge and practices of indigenous peoples' requires inclusion. Learning to care, love and protect the environment from people who have traditionally strived to do this is a valuable

task. From experiential learning in nature, to transformative learning about aboriginal approaches to sustainability of forestry. These tasks must become embedded in DE, curriculum, school culture and society in order for care of the environment to become a lifelong practice. In doing this, the voices and actions which love and care for our environment will begin to become louder and the economic agenda will no longer speak loudest.

Conclusion

This article suggests that the emphasis of affective learning should move towards transformative and nature-based experiential learning to promote love, care and connection in order to ground climate change activism in an authentic lifelong approach. The need to embed CCE in an approach that places care for sustainability and ecology at the heart is necessary for a clearer articulation of how sustainability and DE is positioned in schools and ITE. However, this specific practice suggestion requires both a deeper questioning of the knowledge basis as well as a focus on DE or ITE structures and cultures.

Considering the response within Irish education policy and practice to concerns regarding literacy and numeracy performance there is hope that the appropriate effort and finance can be prioritised in response to the 2019 climate change performance index (CCPI). This independent monitoring tool of countries' climate protection performance highlights that Ireland ranks as 'the worst-performing EU country in the CCPI' (Burck, J, Hagen, U, Marten, F, Höhne, N and Bals, C, 2018, 19). This article reaffirms the contribution of DE but suggests further potential by engaging the ITE community further, particularly in relation to asking questions about what we value in education and addressing the student teacher and graduate perception that DE isn't a valued task while on school placement. Furthermore, school contexts which cultivate teachers' and pupils' love for the environment and value the lifelong journey and necessity of contributing to climate change activism require a greater presence.

Acknowledgements:

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