



Engaging young children with climate change and climate justice

Nathan Tagg and Tahseen Jafry* – *Glasgow Caledonian University, UK*

Abstract

Meeting the global challenge of preventing global temperatures rising by more than two degrees Celsius by the end of the century is not going to be easy. With the majority of carbon emissions coming from the developed nations, there is an onus of responsibility on these nations to support the developing nations, who have contributed the least. This would be a significant step towards delivering climate justice. This article demonstrates that gaining traction and support for climate justice can be achieved through the power of education, by translating contemporary research for children, connecting them with it and embedding them in it. Working with 154 primary school children in Glasgow, this article provides: (1) an overview of a climate justice research project, Water for ALL, which was conducted in Malawi and Zambia; and (2) reflection on the challenges of translating the research findings for use in the classroom so it becomes not only meaningful but personally engages children with current issues of climate in/justice. Our findings highlight that it is possible to connect children not only with a complex topic, but also with research findings through the development of practical learning classroom exercises. Arriving at those classroom exercises is a 'process' that requires putting the research through a process of translation and communication before it can be shared with children. The interface between research and education lends itself to the power of practically based science-led education. As shown in this example, the Water for ALL research project has given the school children a sense of 'ownership' of climate change and climate in/justice, to the extent that they can highlight their role and contributions to addressing the climate challenge.

Keywords: climate justice; education; primary school children; practical learning

Key messages

- Embracing the transformative power of education for climate justice is critical to the transition of society to a more harmonious way of life that fosters values for the protection of our environment.
- Primary school children aged around 10 years have embraced concepts around the global challenge of addressing climate change, and have connected and resonate with the contested nature of climate in/justice.
- Translating research to tailoring practical classroom sessions around real scenarios in relation to climate in/justice, which has the ability to connect with the daily lives of children rather than abstract situations, is critical to achieving more 'enhanced' learning.

Background

The world's most developed nations, who through centuries of high carbon emissions have contributed most to climate change, have a moral responsibility to help less well-developed nations (Roberts and Parks, 2006; Shue, 2014). These nations are experiencing the worst effects of climate change, such as increasing numbers of famines and floods (World Economic Forum, 2016; WHO, 2017), but they have contributed the least carbon emissions (Thorp, 2014). Climate projections in southern Africa suggest that variability is likely to increase in the future, with extreme weather events becoming more frequent; Malawi and the eastern region are reported to be among the worst-affected countries, with frequent floods and droughts (Krysanova *et al.*, 2008). The authors of this paper consider that this is an injustice; environmentally and socially, the costs signify the rhetoric of subordination and the continuing deterioration in quality of life for people in the affected countries and regions. The global challenge is to tackle and support the least-developed nations to achieve climate justice and redress the imbalance in protecting the rights of the most vulnerable people. There are a number of mechanisms for doing this, such as clean technology development, mitigation and pursuing climate change law and litigation; or it can be achieved by strengthening knowledge between the disciplines of social justice and climate science to bring a more humane and climate-just approach to tackling climate change and conserving the environment through education.

Mary Robinson highlights the transformative power of education for climate stewardship, indicating that when delivered in an effective and multidisciplinary manner, education can increase consciousness of climate change and sustainable development and produce new insights, not only at the scientific but also at the sociological and political level (Robinson, 2017). This idea of climate stewardship is explored further by Shaw (2016), who seeks to tackle the climate crisis by the co-production of knowledge, because he considers climate stewardship to be beyond the scope of one individual. Education for tackling climate change can be both powerful and transformative. Kanbur (2015) considers that this education can change behaviour in rich countries. He argues that education plays, and will play, a key role in addressing the twin dimensions of climate justice, between and within generations. If successful we can look to 'transition towards a more harmonious, more humane and ecological way of life' (Tokar, 2010: 98). Harnessing the power of education is what this paper encapsulates.

There is evidence, such as the UNICEF Climate Ambassadors Programme (UNICEF, 2015) that demonstrates that young people's engagement with climate change has the power to build a sustainable future. Bartlett (2011) writes extensively about focusing on children's agency as one part of a larger concern with the human rights and social justice aspects of the response to climate change. She postulates that consideration needs to be given to climate change as being not just about the environment – there is a need to more consistently bring the social justice concerns into focus with the larger picture. It is with this in mind that this paper describes the challenges faced by, and the processes adopted by, the Caledonian Club (which is a Glasgow Caledonian University (GCU) widening participation to higher education hub) to connect the findings of a research project called Water for ALL, conducted in Malawi and Zambia, with Scottish communities via the GCU Caledonian Club Schools initiative. As such, this research contributes to filling a knowledge gap in current literature about engaging children with climate in/justice, not just climate change. Specifically, the research set out to determine how to convert findings from a research

project on climate justice (Water for ALL) to educational/learning resources for primary school children and address the following research question: to what extent can researchers and engagement experts come together in harnessing the transformative power of education to deliver climate justice, drawing on children's agency as catalysts for change?

The research project was funded by the Scottish Government's Climate Justice Fund. The overall aim of Water for ALL was to contribute to achieving water access equity and entitlements in Malawi and Zambia, and developing a socially inclusive, gender-transformative and climate-just governance system.

The project had three outputs:

1. to provide an understanding of the different approaches taken by a range of stakeholders to deliver effective water resources to reach the poorest, via a climate-justice lens
2. to develop a consultative approach to water access using a climate-just approach/methodology
3. to consider how the climate-justice approach can be used and adopted by a range of stakeholders, including school children.

The Caledonian Club activities were conducted by way of delivering on Output 3.

The term 'climate justice' has evolved from the world of activism. In an attempt to use a workable conceptualization of climate justice, the following definition by the GCU Centre for Climate Justice (CfCJ) was adopted as the foundations for this work, as it aligned directly with the strategic scope and focus of the Scottish Government's Climate Justice Fund and the Water for ALL project:

Climate justice recognises humanity's responsibility for the impacts of greenhouse gas emissions on the poorest and most vulnerable people in society by critically addressing inequality and promoting transformative approaches to address the root causes of climate change.

(Meikle et al., 2016: 497)

Methodology

From April 2015 to September 2016 the Caledonian Club worked with GCU's CfCJ to share the findings of this 18-month project. The work involved was an iterative process on the translation and communication of research findings from the project on climate in/justice in the context of climate change and access to water in Malawi and Zambia to school children in Glasgow. The cohort chosen for this was Primary 6 (P6) children, who are about 10 years old; 154 pupils from Camstradden, Elmvale, Haghill Park, St Bartholomew's and St Monica's primary schools in Glasgow took part.

The research was communicated across three practical developmental stages: the launch, in-school practical sessions and the showcase (see Box 1). The result was a programme of activity that would engage P6 pupils across the duration of the academic year. They would explore the water cycle; their water usage; the terminology of climate change; research people, culture and environmental challenges; and engage with the new concept of climate in/justice.

Box 1: Practical developmental stages

Launch and classroom session 1

The day started with a science show, 'Water Water Everywhere', before introducing the two project partner countries (Malawi and Zambia) that were to be the focus during session 2. At this point, there was a short classroom-style activity to get pupils to think about potential causes of disparity and to categorize each cause/disparity as either 'man-made' or 'natural'.

Classroom session 2

Session 2 aimed to provide pupils with a greater insight into their respective partner countries, as well as a recap on issues explored at the launch, which looked at water use in the pupils' own communities.

Classroom session 3

The third session focused on climate in/justice as a concept. This was done through the use of games and quizzes, and every child made a climate-justice pledge for action(s), which was then used to fill a 'climate-justice tree'.

The showcase

The project culminated with a showcase in which all 154 Primary 6 pupils visited GCU's Glasgow campus to present their work to parents and invited guests. A 'climate-just' wall of raindrops was created to supplement the pupils' pledges, and to show their understanding of the terms 'climate change' and 'climate injustice', and what a 'climate-just' world would look like. Pupils reviewed what they had learned about access to water and its use in Glasgow, and Malawi and Zambia.

Water for ALL research findings

The key findings of the Water for ALL project conducted in Malawi and Zambia are highlighted here. Scanlon and colleagues (2016) consider that access to water in sub-Saharan Africa continues to be a challenge, to the extent that there are more people without access to water in 2015 than there were in 1990. This clearly indicates that the current approach to water provision in the region has been ineffective. Governments have failed to provide structures, mechanisms or approaches that guarantee water for all. As a result, a vacuum has been created that has been 'filled' by a number of social actors (non-governmental organizations (NGOs), faith-based organizations, donors), engaged at various levels in communities across the region to provide water. The provision of water in both countries is multifaceted, requiring improved coordination and cooperation among social actors to streamline and focus on the provision of water to reach communities, and to address equity and rights to access. The project also draws attention to the need for governments to take a more leading role by facilitating long-term investment in the sector and promoting initiatives that incorporate the right to water into a broader agenda of socio-economic development. It also concludes that in order to achieve universal access to water, a new perception of rights and responsibilities is vital in communities, among citizens, donors, NGOs and the public sector as one step towards reducing the number of people without water in the future.

The challenges and processes

Translating research findings into practical classroom sessions

The project of connecting the Water For ALL research findings to school children was developed as a result of collaboration between two teams with specific, yet differing, knowledge and expertise: the CfCJ, with the research and subject-specific climate-justice expertise, and the Caledonian Club, with community outreach and widening participation expertise. This collaboration was based on a fundamental understanding, recognition and appreciation not only of the 'knowledge gap' that existed between the CfCJ and the Caledonian Club, which needed to be addressed, but also of the 'knowledge capital' that existed, and this set the foundations for the roll-out of project activities.

Thus the collaboration presented itself with three main challenges. These were:

1. how to bridge the gap in knowledge and understanding of the complex sociological and environmental issues of climate in/justice that existed between the Caledonian Club team and the CfCJ researchers who were leading the research
2. how to streamline and identify key aspects of the large volume of research material to be used for effectively communicating to the children
3. how to ensure that the educational messages did not dilute the original research findings.

A number of round-table discussions were held between the Caledonian Club team and the researchers on the background, scope of the research and timeframe for the evolving research. Research documents were shared, providing context for the climate challenges faced within Zambia and Malawi. It was challenging to navigate the complexity and volume of the information, which was compiled from governmental and stakeholder statistics, as well as research findings. It was only through an iterative process of communication, explanation and clarification between the two teams that gaps in knowledge were overcome.

It was evident from the initial presentation of research documents that there was an abundance of potential points that could become the focus of the work to take forward with children. The first challenge was identifying which of these could be addressed within the confines of a project with primary pupils while accurately representing the research findings. A challenge for the Caledonian Club was to identify what elements could be identified and developed in a way suitable for the target audience of P6 pupils. This is where the club's 'knowledge capital' of working within school settings came to the fore, drawing on their wealth of expertise and proficiency.

The Caledonian Club team reviewed the research material and identified areas believed to be of key importance to the topic of climate in/justice and the situation facing Malawi and Zambia regarding the provision of water. These were then presented to the CfCJ researchers, who provided valuable feedback on how they perceived that the selected key points could represent the topic as a whole.

In terms of feedback, one of the concerns raised by the CfCJ during this process stemmed from the Caledonian Club's use of information from charitable organizations on the impact of climate change, and how that fed into the concept of climate injustice. The CfCJ was clear in its feedback that the project should not fuel a stereotype of helpless people in a developing country needing to be rescued. Instead, the club should focus on presenting the challenges faced by people in Malawi and Zambia, the strength and resilience the people show in overcoming these, and focus on the root causes and the role of developed nations in the creation of, and possible solutions

to, these challenges. The CfCJ and the club worked together on this concept, using a communication-feedback loop until we came to an agreement on what messages to take forward.

We wanted to highlight and share contrasting experiences between children living in Glasgow and children in Malawi and Zambia within the climate in/justice context. The CfCJ guided the Caledonian Club work to ensure that activities gave a true and accurate representation of the issues identified through the research. We identified four simple key messages to develop into practical exercises:

- Many people in Malawi and Zambia do not have easy access to water.
- In Glasgow, we can get water easily.
- In Malawi and Zambia, water is not a human right.
- Climate in/justice.

Despite our collaborative work using the communication-feedback loop, working with cohorts of P6 pupils from across five partner primary schools did present unexpected challenges. Even after the Caledonian Club and the CfCJ had agreed on the project outline, the reality of delivering it highlighted issues that needed to be addressed. For example, during the launch event we had developed a maths-based activity that was intended for pupils to consider their own water use, identify what tasks they did each day that used water and then calculate their total individual water usage. With a multitude of activities planned and a tight schedule, only a small degree of flexibility was possible. What became apparent as the exercise progressed was that due to the divergent learning levels across the cohort, this activity was difficult for some participants to carry out. This in turn placed additional pressures on the student mentors who supported the pupils. Learning from this, the difficulties highlighted through the task influenced the nature and scope of the remaining activities.

Communicating research to pupils

It became clear early on that in order to introduce the complex issue of climate in/justice, the language of communication would need to be simplified. Climate justice is a multifaceted and politically challenging concept. Faced with this challenge, the Caledonian Club 'simplified' the issues to focus on pupils' own experiences. The conscious decision to focus on their own experiences was taken to ensure that the pupils felt personally engaged with the topic, and that it was something they felt they could change, act on and make a difference to, and this laid the foundations for the latter stages of the project, dealing with water as a human right. The practical classroom sessions worked solely on providing information that was either directly focusing on the pupils' experiences or from which they could make some direct comparisons. For example, the pupils focused on how they use water while getting ready for school and during the school day. This was then considered in comparison with the experiences of a child of their age in Malawi or Zambia, who has little or no access to water.

Validation of, and reflections on, engaging with children

This project was set up to engage 154 pupils in a range of practical activities to get them thinking about: (1) water; (2) how it is used within their own communities and homes; and (3) climate change. One of the exercises conducted was for the children to make a personal pledge for action and to fill a climate-justice tree. The types of pledges that the children made 'validated' that the findings of the research had been translated and communicated correctly. A review of the types of pledges made by children highlights

that children are thinking about water as a resource; the availability of, supply and access to water; carbon emissions; and climate change in Malawi and Zambia:

- Let's start to reduce climate change impacts in our respective households.
- I will start to recycle more.
- I pledge to walk more.
- Waste less water while having a shower.
- I pledge to save energy at home and do more recycling.
- Pledge to use alternative transport once a week to work.
- I pledge to raise awareness about climate change and injustices through blogging.
- Educate people about pollution.
- Use less electricity and turn off lights if I don't need it.

The base of knowledge shown by the pledges was taken one step further to validate their understanding of climate in/justice through a practical exercise conducted at the last developmental stage, the showcase. A 'climate-just' wall of raindrops was created to supplement the pupils' pledges and show their further understanding of the terms 'climate change' and 'climate injustice', and what a 'climate-just' world would look like. Pupils revealed what they had learned about access to water and its use in Glasgow, and Malawi and Zambia. Examples from the 'climate-just' wall of raindrops are:

- In a climate-just world, have access to electricity!
- A climate-just world for when people make changes to help other people in their communities.
- In a climate-just world, all of the farmers can grow their crops and everyone can eat.
- In a climate-just world, every child would have enough clean water.
- In a climate-just world, our actions in Scotland won't affect people in Zambia.
- In a climate-just world, people don't have to drink dirty water and they won't catch disease.
- In a climate-just world, every child should go to school instead of staying at home to work and collect water.
- In our climate-just world, people in Zambia don't have to walk for miles for clean, safe water.
- In a climate-just world, farmers would be able to rely on the seasons for growing crops.

Concluding remarks

This project has allowed for the translation and communication of research findings to school children on the complex nature of climate in/justice. In doing so, it has addressed a knowledge gap about climate change/climate justice in the engagement of children with climate justice. As highlighted earlier, education for tackling climate change is pivotal, and what we have done here is exemplify that, over a relatively short period of time, children demonstrate signs of becoming 'agents of change' through the pledges that they have made. We cannot guarantee that the children will adhere to these pledges, as the research is not longitudinal, but we consider them to be good initial indicators of change. Tackling issues of climate injustice is sensitive, given the historical nature of carbon emissions in the Global North. However, we have demonstrated that the co-creation and co-production of climate-justice educational material by researchers and engagement experts has been successful in creating a

collective consciousness of climate justice, as illustrated by the climate-just raindrops. This paper highlights that this was our core strength and contribution to harnessing the power of education to address climate in/justice.

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Notes on the contributors

Nathan Tagg is the Caledonian Club Manager and is based at the Outreach Department at Glasgow Caledonian University. Nathan oversees all club projects and is responsible for strategic planning and development. He can be contacted at nathan.tagg@gcu.ac.uk.

Tahseen Jafry is Director of the Centre for Climate Justice at Glasgow Caledonian University. Her contribution to international development spans two decades, undertaking primarily research for development. She has field experience in over 15 countries spanning South Asia, sub-Saharan Africa and the Small Island States. Her current research interests include transition to climate justice, the gendered management of natural resources, inclusive development, climate-induced migration and vulnerability, and psycho-social impacts of climate change. Tahseen Jafry can be contacted at t.jafry@gcu.ac.uk.

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