



Sigtuna Think Piece 8

Piecing Together Conceptual Framings for Climate Change Education Research in Southern African Contexts

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Abstract

This think piece considers a range of theoretical and conceptual tools that may assist with the emergence of a research agenda for climate change in education. It considers the conditions that are created by climate change in and for southern African contexts, and then deliberates which contextually related theoretical tools may be useful to frame research questions for climate change education. I consider the educational research implications of adaptation practices, reflexive justice and agency, reflexivity and capability, noting that a climate change education research agenda, not different to a wider reflexive environmental education research agenda dealing with transformative praxis in southern Africa, is essentially a sociologically and historically emergent 'researching with' agenda, and is in effect a social learning process. In putting together these conceptual framings for a climate change research agenda in southern Africa, I am interested in exploring how participatory social learning research may strengthen agency and reflexivity (development of capabilities) in response to socio-ecological conditions.

Introduction: Thinking about Climate Change Critically in Context

This think piece emerged from a slow engagement with the topic of climate change and its representation in environmental education texts, materials and courses in southern Africa over the past few years (see a review in Lotz-Sisitka, 2009). In considering these, it struck me that climate change education programmes in southern Africa were mimicking their counterparts in countries that were high emission producers, leading to ahistorical articulations of climate change education that lack responsive location. There is no shortage of climate change 'messages' to reduce carbon dioxide, to switch off lights, to stop travelling and to change to renewable energies (i.e. primarily mitigation responses targeted at individuals). And there is no shortage of messages that create fear and stress as the projected global disasters associated with climate change make it into the media, and then infiltrate into the consciousness of educators. These lack adequate analysis from structural, educational and contextual vantage points, and fail to provide adequate response strategies or alternatives that are contextually located. The question that I started to ask was, 'How is climate change manifesting in southern Africa, and what therefore are the contours of an appropriate educational response?' For an educational research programme, this question required not only a contextual analysis, but also contextually relevant theoretical perspectives that could help to develop research perspective in relation to the contextual analysis.

Contextually Relevant Theoretical Lenses

In this section I introduce three contextually relevant theoretical perspectives to guide the emergence of a climate change education research agenda. They are: adaptation and sustainability practices; reflexive justice; and reflexivity, agency and capability.

Adaptation and sustainability practices

An overview of how climate change is manifesting in a southern African context leads to a number of interrelated socio-ecological concerns, most notably: projected increase in malarial areas (i.e. increased health risk – in a region where HIV/AIDS and malaria already have a heavy toll on life); further loss of water security (due to projected decreases in precipitation), with associated further loss of food security (due to heavy dependence on small-scale, rain-fed agricultural practices and non-drought resistant crops which were introduced with monoculture and hybrid seed production and sales); increased vulnerabilities for women, who are the primary food producers; coastal zone pressure due to projected sea level rise, particularly affecting artisanal fisheries and low-lying coastal cities such as Maputo, Cape Town and Walvis Bay. Loss of biodiversity has also been noted as being a significant projected impact. In South Africa (different in this respect to the other 13 southern African countries), where dependence on cheap fossil fuel energy to fuel the economy is high, there are also considerable challenges to mitigate carbon-dioxide emissions. South Africa has been identified as a country with one of the highest per capita carbon-dioxide emission levels in the world.¹ Thus, in southern Africa there is a need for both: mitigation practices and adaptation practices, with adaptation practices² being more pronounced amongst the majority of the population in the region. For this reason, I focus more on adaptation practices in this paper, and use the terminology adaptation and sustainability practices to be inclusive of mitigation practices and other initiatives aimed at responding to socio-ecological issues and risks.

Significant opportunities exist for a new paradigm of development in southern Africa that is based on promoting adaptation and sustainability practices such as diversity in food production; re-appropriation of indigenous knowledge and traditional resilience practices; empowerment of women; development of new responses to health risks; use and production of new 'green' technologies; the development of green and clean jobs which can improve working conditions; water conservation practices; use of more sustainable forms of energy; and development of collective agency practices that promote new social synergies amongst people across the region (amongst others). The reason for highlighting these issues and adaptation and sustainability practice opportunities that emerge from engaging them, is to note that switching off lights, and reducing carbon dioxide (the most popular climate change practices promoted in education programmes) may well not be the most significant responses to climate change in southern Africa – even though these are probably called for amongst elite communities in South Africa where fossil fuel energy use is high. Supporting agro-ecological diversity practices; use of traditional and new water harvesting technologies and practices; and giving attention women's empowerment (amongst others) may be more significant adaptation practices. Practices, as described by Schatzki (1996:89, as cited in Green, 2009:42–43) are:

- learning how or improving one's ability to do something by repeatedly working at it and carrying it out;
- a temporally unfolding and spatially dispersed nexus of doings and sayings;
- performing an action or carrying out a practice of the second sort.

Thus, for educational research, the question to clarify would be what adaptation and/or sustainability practices are most significant to focus on in climate change education praxis, and how are these to be determined (with communities, for communities, or through dialectical engagement with both forms of social engagement)? A further dynamic of this framework for climate change education is to develop understandings of the nature of practice, how practices are learned, and more insight into practice epistemologies. In the Rhodes University/SAQA research programme, we have started to identify how one might research the learning of change oriented sustainability practices (Lotz-Sisitka, 2008). For example, drawing on Bourdieu's insights into the *Logic of Practice*, and insights into the nature of environment and sustainability practices (which tend to emerge in response to risk), we have identified the following framework for researching practice:

Table 1. Analytical framework for describing sustainability practices³

- Sustainability practices are often constituted through response to risk and can be said to be characterised by an epistemology of risk (Beck, 1992; 1999; 2009); not everything is known about sustainability practices i.e. they are uncertain and our knowledge of such practices is fallible (Beck, 1992; Scott & Gough, 2004);
- Sustainability practices in workplaces and in society more broadly are either manifestations of a) a change in work/social ethic or b) normalisations of new regimes of truth (where ethics are normalised into new practices) (Foucault, 1979);
- Sustainability practices [and climate change responses] are constituted in a contested discourse context (Martinez-Alier, 2002; Dryzek, 1995; Lotz-Sisitka, 2009b). There is no clear consensus on the meaning and material configurations of sustainable development, although there are some indicators of what needs to be done (e.g. we know that we need to reduce energy consumption and carbon-dioxide emissions, but how this is to be done in different contexts is contested, and what priority is to be afforded to this, is shaped by various interests and power relations). Sustainability practices are therefore often characterised by conflicts of interest (with each other, and with the status quo) (Wals, 2007).
- Bourdieu's (1980) *Logic of Practice* describes the following dimensions of practice:
- Practices are time and space bound (i.e. there is a temporal and a spatial dimension to them),
- Practices are 'experience laden' in the sense that much of what is practiced is tacit or not made explicit but simply done,
- Practices are not easily interpreted from descriptions of them; and
- Practices are characterised by an improvisatory and strategic logic.

Bourdieu (*ibid*) also explains that *habitus* affects our every action. *Habitus* is an underlying social structure shaping the way things are done. The *habitus*, however, can be interrupted, but this is not an easy thing to do. Janks (2008) argues that this requires learning to become more conscious of the unconscious aspects of practice, and to make these available for interrogation, reflexive review and change, which takes time, ongoing reflexivity and repeated practicing of the new form of practice. Bourdieu's theory of *habitus* provides a theory of our unconscious actions, and helps us to understand the complexity of the change process.

We have established that the learning of sustainability practices takes time, and involves various forms of cognition (Mukute & Lotz-Sisitka, 2009a) and that once-off educational interventions may not be the most useful form of educational engagement to inform and/or understand sustainability practices. Ongoing social learning processes associated with practices (e.g. working with and in communities of practice⁴) where distributed cognition, and different forms of cognition exist and can interact, may provide more useful units of analysis for researching learning and climate change responses.

Reflexive justice

Another dynamic associated with climate change discourse is the social-justice aspect. Climate change, as others have noted in various times and places, is a social-justice issue since the polluters are not paying, the consequences are distributed unevenly and impact most severely on the poor (Worth, 2009; Lotz-Sisitka, 2009a). Engaging this question requires recourse to critical social theory to make visible the structural features and mechanisms that shape the consequences of climate change. To neglect this could potentially lead to conservative, localised only or egoistic responses to climate change (Lotz-Sisitka, 2009a). As Nancy Fraser (2008) has indicated, and as Nunes (2010) writes, in the absence of global institutions that can be held accountable for global issues such as climate change, our only recourse is to produce local forms of political action that are at the same time global. This is more complex than simply ‘acting locally’, as ‘there is no going back on the political consciousness of belonging to a single world’ (Nunes, 2007:7). In an earlier paper I argued that for education, this requires giving attention to social learning processes that build local capacity for adaptation while also building capacity for social critique and advocacy that does not render local adaptation practices naïve or conservative (Lotz-Sisitka, 2009a). At the core of this argument lies the concept of reflexive justice, which Fraser proposes as being our only (current) alternative in the absence of effective justice mechanisms that can properly account for globalism’s non-accountability.⁵ Reflexive justice involves the ongoing practicing of social justice, within a frame of what Beck (2009) describes as methodological cosmopolitanism,⁶ where it is possible to think of everyone as ‘your neighbour’, and to conceptualise the relationship between different actions in ever widening time-space configurations. In societies where inequalities remain deeply seated (such as South Africa) such a concept of justice is both necessary and important.

For educational research, this requires a focus on two types of questions: ethical deliberations in the educational process, and the practicing of reflexive social justice.

Reflexivity, agency and capability

A third, and equally important contextual dynamic for educational research in southern Africa is the history of inequality, disenfranchisement and loss of social cohesion wrought by colonial intrusions, inequalities of structural adjustment programmes, inefficiencies, and paradoxical continuities in colonial-type governance practices in postcolonial governments. This broader social history, together with the context of heightened risk and new opportunity discussed above, requires people to continuously reflexively make new life choices that are responsive to

current and future generations' needs, as well as contemporary socio-political, socio-economic, and socio-ecological conditions – no easy task.

It is important not to confuse the contextual histories of education and societies (i.e. poor education systems) with people's power and inherent capabilities for learning, resilience, adaptation and change. In response to continued patronage in development and educational theories and practices amongst development and education intervention organisations, a leader of a shack dwellers association in Cape Town famously wrote a letter to a left-leaning NGO titled 'We Are Poor, Not Stupid' (cited in Pithouse, 2009:169). In citing this, Pithouse argues that there is a need for a single axiom 'everybody counts, everybody thinks' (*ibid*). This recognises that everyone has recourse to the reflexive resources to develop individual and collective capability, even if their social and education systems and cultures have not previously needed to, or wanted to develop or enhance such reflexive⁷ capability. Citing Rancière (2007:51–52), Pithouse (2009:169) argues that 'starting out from the point of view of quality, asserting equality as a given, working out from equality, trying to see how productive it can be and thus maximising all possible liberty and equality' is an important strategy to avoid reproducing inequalities and various hierarchies. With this emancipatory interest at the core of our work, we have been exploring the relationships that exist between learning, agency and social change in our research programme at Rhodes University (see for example Mukute, this edition).

We are currently, in our research programme, exploring various social learning methodologies to examine learning interactions and reflexivity, and the emergence of contradictions and tensions in practice as sites for expansive learning that foster individual, collective and relational forms of agency, and which lead to changed practices in diverse contexts (see for example Downsborough, Pesanayi & Mukute, this edition). This work draws on post-Vygotskian cultural historical activity theory (after Engeström, 1987, 2001), and on Bhaskar's (1993) theory of dialectical critical realism, which theorises emergence and transformative praxis. Bhaskar (1993) writes that transformative praxis is driven by informed desire, in the sense that agents have an interest in removing constraints on their freedom in order to satisfy their needs and desires. He argues that people are rationally compelled to absent malaise, ills and/or constraints, and are thus rationally committed to '... absencing practices, and thence to absencing all dialectically similar ills, and thus to absent all the causes of such constraints' (1993:237). We can see evidence of this in the environmental field for example, where initially we saw a commitment to absencing the immediate causes of environmental issues (e.g. through implementing end of pipe solutions to pollution), which led to further absencing practices (e.g. absencing of end of pipe pollution through cleaner production and sustainable design). The environmental movement has, as yet, not been able to fully absent all the causes of environmental issues, since these are complex and are intertwined with modern growth economics and globalisation dynamics which are yet to change. Absencing the causes of climate change are located in calls for carbon-dioxide emissions reduction through keeping oil and fossil fuel in the ground (i.e. changing the basic structure of modern society's energy requirements), changes in economic systems and lifestyles, and approaches to practicing reflexive justice. In this sense, adaptation and sustainability practices (as practiced now) can be seen as 'short term' measures that are required to deal with the consequences of climate change, since absencing the causes of climate change is a time-lagged

process in which consequences manifest while the causes remain unchecked. Transformative praxis, in the context of adaptation practices and climate change, can only really be achieved when there is no further need for adaptation or sustainability practices in response to climate change. Ironically, for this there is a need for ongoing adaptation and sustainability practices at various levels and scales.

Bhaskar's theory of transformative praxis, is based on an emergent theory⁸ of agency. Such a theory of agency can explain how agency emerges from structure, and how, through social interaction, it has potential to or can transform structure (although such observation is not always visible in short time-space configurations). Bhaskar (1993) distinguishes between power1 (the transformative capacity intrinsic to agency) and power2 (as exercised, manifest, mobilised, ideologically legitimated and discursively moralised). Engaging with/in power2 relations is always a 'messy affair' (Joseph, 2006), and power2 affects the exercise of power1. This conceptualisation of power relations is important for climate change education research, and in the light of the social-justice dynamics raised above. Careful observation and distinction of these forms of power in educational research will be necessary to avoid '... naturalising the liberal model of human agency which takes for granted the existence of the strongly intentional rational actor having the capability and power to translate intentions into consequential actions' (Dean, 2006:124). This critique could also be valid in Sen's account of capability, if the meaning of his 'ethical individualism' is misunderstood as 'ontological individualism'.⁹ Sen (1999:31) states that:

... individual freedom is quintessentially a social product, and there is a two way relation between 1) social arrangements to expand individual freedoms and 2) the use of individual freedoms not only to improve the respective lives but also to make the social arrangements more appropriate and effective.

Sen's ethical point is that every human being has the potential to conceptualise or participate in conceptualising valued beings and doings and should be given the opportunities to do so – a fact that he realises is not equally possible for all individual actors whose lives are embedded in, and constrained by structures, histories and cultures and/or some forms of mental illness. In the light of these insights, it is important not to neglect working on the question of collective agency in environmental education research focusing on climate change, and the social contexts in and through which agency operates.

Mukute (2010) shows that in combining analysis of agentic talk¹⁰ and reflective talk in processes of expansive learning, it is possible to identify and distinguish between individual, collective and relational forms of agency, and to see that there is more to thinking about agency than at the level of the individual only. His research also shows that engaging within expansive learning processes with communities of practice in sustainable agriculture practice activity systems allows for the mobilisation of such forms of agency (see Mukute, this edition and Mukute, 2010). This too, is important for climate change education research, since responses are likely to require not only individual actions, but wider forms of collective societal change, if adaptation and sustainability practices are to become institutionally located and widely

practiced as reflexive social-justice acts. We are interested too in how this work contributes to development of capability in the sense used by Sen, i.e. whether and how people come to value their new doings and beings that make up the adaptation and/or sustainability practices, as this will provide insight into the emergence of ethics embedded in new practices. For example, do communities value adaptation to sustainable forms of agriculture, or are these practised out of necessity or lack of other alternatives?¹¹ Agency, as described by Kabeer (1999:438), is pluralistic and multi-dimensional, and involves:

... the ability to define one's goals and act upon them. Agency is about more than observable action; it also encompasses the meaning, motivation and purpose which individuals bring to their activity, their sense of agency, or 'the power within'¹². While agency tends to be operationalised as 'decision-making' in the social science literature, it can take a number of other forms. It can take the form of bargaining and negotiation, deception and manipulation, subversion and resistance, as well as more intangible, cognitive processes of reflection and analysis. It can be exercised by individuals as well as by collectivities.

In our research programme so far, we have been less influenced by Nussbaum's (2000) list of capabilities¹³ (although we recognise and respect the points about social justice that she makes, and the reasons for their articulation), probably because we have been more interested in the practical processes of capability development, i.e. how people come to articulate and express their valued beings and doings, and how this influences changed practice. The Nussbaum work, and deliberative initiatives to develop various 'lists' of capabilities in different contexts (e.g. Robeyns, 2005) are useful 'direction finders' for wider conceptualisations or reflexive engagement with processes of capability development, and could further enrich our research in future (see for example Kronlid, this edition).

In our most recent work (see Mukute & Lotz-Sisitka, in press b), we have become interested in micro-analyses that provide evidence of agentive decision-making and how and why people are motivated and supported to participate in change oriented practices (e.g. learning sustainable agricultural practices). This work is both descriptive, and expansive (after Engeström's 1987 notion of expansive learning), and what is increasingly of interest to us is the potential that social learning research (e.g. as practised by Mukute, this edition; see also Mukute, 2010) has for expanding reflexivity and capability in response to socio-ecological conditions and opportunities for change (see also Lotz-Sisitka, 2008). This, in Engeström's (2001) language, requires boundary crossing and the engagement of tertiary and quaternary¹⁴ contradictions that exist between central activity systems and other activity systems that influence the central activity system (e.g. a water harvesting practice activity system and the local government extension activity system). Mukute's (2010) research also shows that critical realist ontology and causal analysis (explanatory critique) can provide better insights into the constitution of such contradictions so that they are not conceptualised only in terms of what people say (see also Leesa, 2007). This also involves understanding the nature of deliberative pedagogy and enquiry required in 'boundary zones' that allow '... practitioners to express multiple alternatives,

challenge the concepts that are declared from above by using their own experienced concepts, and through these debates create a new negotiated model of activity' (Daniels, 2008:128).

Summarising Some Starting Points for Climate Change Education Research

From the above discussion on contextually relevant theoretical perspectives for guiding climate change education research, it is possible to argue that a climate change education (or any environmental education) research agenda in southern African contexts could be guided by the following conceptual framework (which will need to remain open to reflexive review):

- Climate change education involves contextually located adaptation and sustainability practices, which implies a practice centred epistemology and ontology (i.e. knowledge emerges in and from practice). At the same time climate change education involves understanding and navigating risk, which implies a risk epistemology (i.e. not everything is certain or predictable, and global climate change appears to be heightening risk, and our perceptions of risk) – making for an open-ended and reflexive epistemological environment for learning;
- A theory of social justice that acknowledges the limitations of distributive justice theories, and that builds on a concept of reflexive justice, i.e. the ongoing practicing of social justice while all of the technical and legal aspects are worked out by governments in a complex (and almost impossible to achieve) global justice context. Such a theory of social justice requires methodological cosmopolitanism which requires us to think of everyone as if they were our neighbour, despite such physical proximities not being possible or probable. This is necessary to develop the critical purchase for absencing the causes of climate change through transformative praxis.
- A theory of agency that takes account of emergence (i.e. it is possible to bring about change engaging with structural constraints, and through socio-cultural interactions that strengthen reflexivity and collective forms of agency); but this theory of agency requires careful distinctions between Bhaskar's (1993) power1 and power2, and how power2 influences power1. The emancipatory project lies in absencing the constraining relations that power2 has over power1. It also requires giving attention to individual, collective and relational forms of agency.
- A theory of learning that takes account of the significance of social learning processes that are emergent and contextually situated, but which also require social critique and the transgressing of local-global spatial configurations, and past-present-future time configurations. This requires boundary crossing (after Engeström) and engagement with new concepts in 'boundary zones', through deliberations on tertiary and quaternary contradictions, and deliberations on how deliberations are carried into action (i.e. what practices are necessary and valued).

Some of this contextual theoretical work discussed here is, and has been 'tested' and developed further at the context-theory-empirical interface in some of the studies that are emerging in the Rhodes Environmental Education research programme (see for example Mukute &

Pesanayi, this edition; Mukute, 2010). However, clearer articulation of the links between adaptation and sustainability practices, the practicing of reflexive justice, and the development of agency, reflexivity and capability as social change process needs to be taken forward in future case-based research. This will involve a researching 'with' approach to research, or a new genre of participatory research where social learning research is, in itself, a process of emancipatory social change, or capability development.

Endnotes

- 1 These are discussed in more detail in other reports such as UNEP 2006, and *Africa Geographic* (2007), which summarised the main projected impacts of climate change in Africa.
- 2 Schipper and Burton (2009) note that adaptation practices have suffered 'benign neglect' in climate change discourses.
- 3 We see sustainability practices as being similar to adaptation practices in the context of climate change adaptations or adaptations to socio-ecological risk. Both are change oriented.
- 4 After Wenger (1998).
- 5 Evident in actions such as sweatshop employment practices by transnational corporations, the power of some governments to dominate the agenda at international negotiations such as at COP 15, and by recent warmongering instituted by the USA, UK and others.
- 6 Beck (2009) distinguishes between methodological cosmopolitanism (which he describes as developing better understandings of transnational actor networks and how they contribute to the defining and distribution of risks such as climate change); and political or normative cosmopolitanism and a world historical subject of cosmopolitanisation. This distinction is important to avoid the conflation of his concept of methodological cosmopolitanism and totalitarian concepts of cosmopolitanism (see Lotz-Sisitka, 2009a for a more in-depth discussion of this point).
- 7 Dean (2006) argues that educational experiences can enhance the practice of reflexive intentional agency, although authors critical of modern education systems such as David Orr (1995) indicate that educational experiences do not necessarily develop reflexive intentional agency that is ethically informed or practiced, particularly when environmental ethics are brought into the discussion on education and reflexivity.
- 8 This differs from voluntarist (rational choice) and determinist theories of agency. It also avoids conflation of structure and agency (Archer, 1995).
- 9 Robeyns (2005) explains that 'functionings and capabilities are properties of individuals. Hence the capability approach is an ethically (or normatively) individualistic theory. This means that each person will be taken into account in our normative judgements. Ethical individualism implies that the units of normative judgement are individuals, and not households or communities. At the same time, the capability approach is not *ontologically individualistic*' (67, my emphasis).
- 10 Mukute and Lotz-Sisitka (in press b), adapted Sannino's (2008) concept of agentive talk to identify features of agentive talk that also take account of how agents prepare to respond to structural constraints.
- 11 Such questions are important, as Mukute's (2010) research shows for example that sustainable agriculture in southern Africa suffers from 'double stigmatisation' and people may not necessarily

value being involved in sustainable agricultural practices, as such valuing of beings and doings are influenced by contextual issues such as poverty, available choices, histories of oppression, cultural changes and other dominant values that are promoted by modernisation and consumerism.

- 12 Power1 as described by Bhaskar (1993).
- 13 Nussbaum (2000, 2005) argues that capabilities should include at least the following: life; bodily health; bodily integrity; senses, imagination and thought; emotions; practical reason; affiliation; other species; play; and control over one's environment. Her argument is not that these are the only capabilities, but that they are a good proxy for thinking about the goals of global development in an 'increasingly interdependent and globalising world' (2005:197). She argues that the capability approach to development is an 'outcome oriented approach'— and she argues that 'a world in which people have all the capabilities on the list is a minimally just and decent world' (*ibid*:210), and that a list of capabilities (such as the one she proposes) provides a basic framework for thinking about global social justice. She argues that 'Humanity is under a collective obligation to find ways of living and cooperating together so that all human beings have decent lives' (*ibid*:211). She also states that mobilising the capabilities approach is a 'practical job', a job for economists, political scientists, diplomats and policy-makers. She neglects educators here. Her view of capabilities differs from Sen's in the sense that Sen views capabilities as real opportunities, but for Nussbaum they also include talents, internal powers and abilities (Robeyns, 2005:77).
- 14 Engeström (2001:135) explains that 'contradictions within activity become 'a guiding principle of empirical research' and that different types of contradictions can be identified within activity systems – primary (within each constituent component of an activity system), secondary (between constituents of the central activity); tertiary contradiction (between the object of the dominant form of activity, and the object of a more culturally advanced activity system); and quaternary (between the central activity system and its neighbour activities).

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