
‘The drought is my teacher’: Adult learning and education in times of climate crisis¹

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ABSTRACT

In Cape Town we have been experiencing the most severe drought in our history. We are not alone. Other cities – for example, in the United States, Brazil, Spain, Belgium, Australia, Morocco and Pakistan – are also learning to live under new, more extreme, drought conditions. In this article I use the local drought as an aperture through which to identify key insights into how adult learning and education (ALE) can and should respond in times of climate crisis. The article is exploratory, as the ambitious topic opens up a raft of complex economic, socio-ecological and political issues which can only be touched upon. It aims to prompt deeper conversations about ALE and climate crises and to identify key questions for future ALE research.

KEYWORDS

adult learning and education (ALE); climate crisis; fake news; popular education; lifelong learning

¹ The title is inspired by Naomi Klein's article, 'The battle for paradise' 20 March 2018, where she quotes a woman describing the Puerto Rican hurricane Maria as her teacher. Available: <https://theintercept.com/2018/03/20/puertorico-hurricane-maria-recovery/>.

Introduction

Ground Zero stares the citizens of Cape Town in the face. Will the taps of this modern city of nearly five million people run dry? How will we cope? What do we need to do to avoid this happening? What do we need to do to augment the water supply? How should we rethink our relationship with water in the future?

Winter (2018), a water scientist, explains that Cape Town's water supplies remain at high risk because predictions for rainfall in the south-western Cape remain uncertain, although in the long term, with accelerated climate change, drought may well become more frequent. Dam levels continue to fall while people are struggling to achieve the city's target of 450 million litres per day and yields from new water schemes will be known only in the coming months and next year. The general perception has been that the onset of climate change would be slow and measured. This would afford authorities the time to intervene with considered plans. But climate change is a disruptor. Over the past three years, Cape Town and the surrounding regions have experienced successive years of well-below-average rainfall. The experience is changing the way people think about water and how it is managed.

Citizens have halved their water usage within months of the earnest drive led by the city officials to save water (New, 2018). Some citizens are acting with degrees of 'survival pride' as they share their achievements of dramatically reducing their shower time to two minutes or less every other day; no longer flushing toilets unless absolutely necessary; washing clothes only infrequently; not watering gardens and replanting them with succulents; and queuing at the natural springs every other day to collect clean water. There is a strict consumption limit of 50 litres per person per day from municipal supplies. Grey-water systems are being installed along with large water tanks for those who can afford them. Many people are learning new plumbing skills and thinking innovatively about how to get by with less water.

There is a growing realisation that the framing of the water crisis makes it appear largely a 'middle-class problem'. But people who have grown up in poor and working-class homes ask, 'What's new?' Mama Aurelia Kaitezi, living in Masiphumelele, a poor residential area within greater Cape Town, shared her tips on water usage. She has three adults in her household and they use 200 litres over 14 days. She says:

We, like everyone else, value drinking water, cooking and cleaning, washing our bodies, our clothes, cleaning our small home and flushing our toilet. This is how we manage. It takes a commitment from all 3 of us: First we put 10 litres of water in the fridge for drinking. We cook our food, washing our vegetables and keeping the water in a grey-water bucket. After the meal we wipe the plates clean before washing in water by hand. We always use a basin; no water down the sink. We keep the dishwater and boil it, adding a half cap of Jik and it can be used 2 or 3 times, sometimes more. We bath daily, washing by hand with low suds and rinsing with a cloth, keeping the water contained in a portable bath. We use that water to wash

cloths or mop floors. We save it after that for any other needs and for flushing the toilet. We keep a container for teeth-brushing water and add this to our supply of grey water when finished. We have been doing this a few months and none of us has been sick and, even if I say it myself, we all look and feel clean. Water is sacred for everyone and we are all equal, so let's do it together for the sake of all of us (Interviewed by Heather Ferris, March 2018).

The drought heightens awareness of the inequalities in society, of water injustice. Working-class citizens are angered by the 'fake news' that circulates. Suné Payne (2018) expresses how angry she gets when people from economically poor areas are blamed for the crisis. 'How can you blame people who are used to limited resources for a crisis that is not their fault, but the fault of other factors, including utter mismanagement? I speak from experience. I live in what you call a "township" or a "poor area where most water gets wasted". Often, the people who don't waste are found in poor areas – why would we waste something we have limited access to? So why blame us?'

The Cape Town drought is our teacher in so many ways (Dowling, 2018).

The Cape Town drought is just one of many examples around the world of climate turmoil and disaster. In this article, I use this experience as an aperture to identify key insights into how adult learning and education (ALE) can and should respond in times of climate crisis. I begin with a discussion of the use of the terms and the meaning of 'adult learning and education'. I then discuss the climate crisis and the accompanying 'fake news'. This is followed by a discussion of ALE strategies and approaches to be considered in these turbulent times. This is nourished by the work of others such as Walter (2009), Holford (2016), Burt and Lusithi (2017) and Griswold (2017).

Research approach

This article builds on four decades of involvement as a scholar-activist in the field of ALE at local, national and international levels, some of which has been captured in my previous writings. More specifically, it draws on my position as a participant-observer in the current drought in Cape Town. Over the past 18 months, I have been collecting local media reports, reviewing literature (grey and otherwise), attending seminars, participating in social actions and debating with other scholar-activists, in order to deepen and broaden my understanding of the climate crisis, and to make sense of the role of ALE in the context of accelerated climate change.

Adult learning and education

What's in a name?

There is much discussion in the area of ALE concerning the use of terminology (eg Walters & Daniels, 2009). The different regions of the world use different terms to describe ALE: for

example, non-formal education, adult literacy and basic education, lifelong learning (LLL), popular education, youth and adult education, continuing education, and so on. This can and does create confusion when countries self-report, as can be seen in the GRALE III Report (UILL, 2016), which I have highlighted elsewhere (Walters & Watters, 2017). GRALE III reports on a survey of ALE across 139 countries globally and indicates that definitions of ALE varied widely among countries, depending on the immediate needs, priorities and contexts of their populations.

ALE encompasses all formal, non-formal and informal or incidental learning and continuing education (both general and vocational, and both theoretical and practical) undertaken by adults (as this term is defined in any one country). ALE participants will typically have concluded their initial education and training and then returned to some form of learning. But in all countries there will be young people and adults who did not have the opportunity to enrol in or complete school education by the age foreseen, and who participate in ALE programmes, including those to equip them with literacy and basic skills or as a 'second chance' to gain recognised certificates (UILL, 2016:29).

Some countries position literacy as a core focus of their ALE activities, whereas others see it more broadly. This signals one of the fault lines of the report – it is not necessarily clear which definitions are being used in each of the country self-reports. Looking at various responses from the survey, it appears that many countries are still equating ALE with adult basic education (ABE) of one form or another. This makes it difficult to obtain a clear picture of ALE's breadth and depth internationally. In order to develop a more robust understanding of ALE in particular country settings and globally, data received through the survey need to be analysed more deeply if it is to stand up to scrutiny and extend our understanding of ALE. One of the less well-covered sub-areas of ALE, and one that is critical at this time of accelerated climate change, massive inequalities and population displacement, is that of 'popular education'. The limited coverage of popular education is not surprising, since such data are rarely generated through desktop study but requires on-the-ground engagement with participants in educational or learning action processes.

The importance of finding a common language is well illustrated by the regular surveys by the UNESCO Institute for Lifelong Learning (UILL). Their efforts are contributing towards ALE's gaining more traction globally. ALE is seen as part of an LLL philosophy and approach, which is the overarching term for all education and learning across all ages ('from cradle to grave'). The German Adult Education Association (DVV International) also began a process with a group of about 15 of us from various regions of the world, in Suwon, Korea, in October 2017. The objective was to explore the finding of common terms to describe the field, but there is still much work to be done to gain more universal acceptance of common usage and agreed definitions.

Important research questions are embedded in the 'naming' discussions, including what the barriers are to being able to achieve more traction for common ways of describing the field; and

how to ensure that the breadth and depth of the field are fully represented in the global discussions and research undertakings.

What is the extent of ALE?

A young mother in Bangladesh is learning about nutrition for her child; a school teacher is upgrading her skills with the latest computer software; a man who has been laid off from his job as a labourer is learning plumbing skills; a community is living through a drought and is learning new farming methods; peace committees have been formed in conflict zones and they are learning about non-violent ways of organising; younger and older adults are learning to be entrepreneurs so they can make a living; women are speaking up and out against violence; young people and adults who did not finish school are enrolled in 'second-chance' programmes; and so the list goes on.

To convey the extent of ALE more graphically, imagine an LLL necklace of beads, like the one developed by the Lao Disabled Women Development Centre (nd), which shows the whole of learning throughout life: two yellow beads represent pre-school; two orange beads, primary school; three red beads, high school; two green beads, post-school university or college; and the 32 remaining blue beads represent all the learning beyond initial education and training. This is the extent of ALE.

ALE, therefore, covers the majority of people's lives; from the time they are deemed to be adult until death. It can involve formal programmes or it can occur experientially. ALE is integrated into all aspects of individual and communal life through formal and non-formal education and training and within diffuse learning environments, relating to:

- health and wellbeing;
- employment and labour markets, including sustainable livelihoods;
- social, civic and communal affairs; and
- arts and culture (Wolpe, 1994; UILL, 2016).

While informal, non-formal and formal learning and education are often used as categories for ALE, I find it difficult to believe that teaching or learning activities can be neatly compartmentalised or held in discrete containers. Rather, I am influenced by Tara Fenwick's (2010) argument that real learning processes are of enormous complexity; they are hybrid, indeterminate, deal with fluid boundaries and 'messy objects', and their status of formalisation cannot be described through static and more or less subjective definitions of informal, non-formal and formal learning. Indeed, Actor Network Theory (ANT) substitutes 'domains or containers' with 'relational networks'. An actor network sensibility understands knowledge to be generated through relational strategies, through networks, and performed through inanimate as well as animate beings in precarious arrangements (Fenwick & Edwards, 2013:56–57). In ANT, learning is assumed to be a materialising assemblage and not a cognitive achievement or way of interacting. As Tara Fenwick and Richard Edwards (2013:54) assert,

teaching is not simply about the relationships between human beings, but about the networks of human beings and things through which teaching and learning are translated and enacted. The drought as teacher illustrates this point.

Given the extent of ALE in terms of length and breadth, why does it struggle for recognition? This very important question is troubling the International Council for Adult Education (ICAE), the largest civil-society organisation with global reach (ICAE, pers. comm., 2018). It is also a question for many ALE professionals and requires further research.

We turn now to a discussion of climate crisis and how ALE can contribute in response to it. This includes questioning, for example: How do educators engage different communities of learners with taboo subjects such as 'a no-growth future'?

Climate crisis – what crisis?

Fossil fuels are heating our planet at a pace and scale never before experienced (Satgar, 2018). Extreme weather patterns, rising sea levels and accelerating feedback loops are a commonplace feature of our lives. The number of environmental refugees is increasing and several island states and low-lying countries are becoming vulnerable (Klein, 2017). Some argue (Masie & Bond, 2018) that we are on an ecocidal path of species extinction. Governments and their international platforms such as the Paris Climate Agreement (Satgar, 2018) deliver too little, too late (Hickel, 2015). Most states continue on their carbon-intensive energy paths, with devastating results. There are growing numbers of environmental activist-scholars (eg Klein, 2017; Satgar, 2018) warning that political leaders across the world are failing to provide systemic solutions to the climate crisis; the private sector is both complicit and often inhibited by the current economic paradigm; and civil society is mostly ill-equipped and uninformed to apply pressure for change.

This is the contemporary context – or is it?

In the light of political developments in, for example, both the United Kingdom with the BREXIT vote to exit the European Union (EU) and the United States' most recent presidential election, there has been heightened discussion in the popular media of 'fake news' or 'post-truth'. Reflecting this concern, the *Oxford Dictionary* (2016) chose 'post-truth' as its word of the year, defining the adjective as 'relating to or denoting circumstances in which objective facts are less influential in shaping public opinion than appeals to emotion and personal belief'. There are many contemporary examples, which include AIDS or climate-change denialists; with Donald Trump, the president of the richest, most powerful and influential country, as well as the biggest emitter of greenhouse gases in the world, being the most prominent (Guerrero, 2018:31).

The wilful spreading of misinformation, deceit or ignorance is, of course, not new. Robert Proctor, a science historian from Stanford University, in the 1970s studied the practices of tobacco firms and how they had spread confusion about whether smoking caused cancer.

He created a word for the study of the deliberate propagation of ignorance: agnotology (Kenyon, 2016). Edward Herman and Noam Chomsky (1988) argued in, *Manufacturing consent: The political economy of mass media*, that there is no such thing as a free press and described five filters of the mass media machine which demonstrate whose opinions matter most. These 'filters' are: ownership; advertising; complicity of owners or journalists; complicity of people for whom there would be consequences should they step out of or over a particular line; and the creation of a common enemy to manufacture consent – for example, for whether a country should go to war or not.

The stakes are extremely high relating to the climate crisis; hence the major incentive for those, for example in the fossil fuel industry, to be highly motivated to spread 'fake news' that denies the facts. Citizens, therefore, need to be equipped to know how to identify what is fake and what is real news. This is made more difficult if the media are restricted or controlled within contexts of growing authoritarianism globally, examples of which there are in Europe, and then there is the United States. These are contexts which call for active ALE interventions.

Populist authoritarian turn

For ALE, the dangers of the global trends towards populist authoritarianism – for example, in Latin America – are real. For those who are concerned with deepening possibilities for socially just, environmentally sustainable and democratic societies, we look to the past as we confront the turbulent new world. We are living in a time when many people are returning to social and political theory from the last century and to theorists such as Hannah Arendt, Antonio Gramsci, Franz Fanon, Steve Biko, and others who have studied the rise of totalitarianism in different forms, whether in Germany, Italy, Algeria or South Africa. They, and many others, are being drawn on to help with collective understandings of what may be happening today and how to resist and shape alternative futures. So, in brief, what does the rise of right-wing populism mean?

Canadian academic Stefan Kipfer (2016:314) asserts that authoritarian populism operates with a profoundly anti-democratic conception of 'the people'. He describes how an 'inert mass of taxpayers, families, nationals or believers are invoked from above by folksy or fiery leaders and mobilised by demagoguery and fear-mongering directed against internal or external enemies'.

When authoritarian populists claim a direct line to the people, they typically do so by exploiting resentment against existing establishments and symbolically stacking it with subaltern figures. One of the distinct features of recent right-wing populism is its close connection to economic liberalism. Kipfer (2016) argues that the rise of today's right-wing populisms can be explained with reference to complex relationships between economic restructuring, socio-political struggle and ideology. The stakes are high and the struggles for hegemony are fierce. ALE, particularly in the form of popular education, including social movement learning, becomes increasingly important as people confront the authoritarian turn.

Elephant in the room?

The climate crisis raises fundamental questions about the kind of economic and political futures that are possible if life on the planet is to be sustained. This, in turn, raises questions about the meanings of sustainability itself. This is a time when the global community of nations, through the United Nations (UN), has adopted the Sustainable Development Goals (SDGs) as a response to the climate crisis. There is a strong argument that the SDGs do not go far enough and are 'too little too late' (Hickel, 2015). Linked to this is the discussion about 'sustainability' – What is to be sustained for whom, at what cost to life, and why?

There is an abundance of evidence to show that the ubiquitous neo-liberal economic model of relentless economic growth to sustain voracious consumer markets is part of the problem. Widespread deforestation, fossil-fuel emissions, industrialised agriculture and the pollution of water supplies are often prioritised above healthy ecosystems, communities and cultures, and are contributing to the rapidity of climate change. Hickel (2015) points to the fundamental contradictions in the SDGs. As he says:

What we need is to tackle the irrationality of endless growth head-on, pointing out that capitalist growth – as measured by GDP – is not the solution to poverty and ecological crisis, but the primary cause. And we need a saner measure of human progress – one that gears us not toward more extraction and consumption by the world's elite, but more fairness, more equality, more well-being, more sharing, to the benefit of the vast majority of humanity.

Economic growth ideology has become a hegemonic force which makes it very difficult to debate, imagine or implement alternatives. This is one of the largest 'elephants in the room' which has to be confronted. As Klein (2014:22) argues, there are urgent choices to be made to avoid catastrophic climate disruption: 'This includes changing just about everything about the economy as we presently know it.'

Klein (2017:267) puts forward powerful arguments for ways towards alternative economic systems in a Canadian example: 'The Leap Manifesto: A call for a Canada based on caring for the earth and one another.' There are many other initiatives where alternative economic systems are being sought (Fioramonti, 2017; Raskin, 2016; Ashley 2018; Pillay, 2018; Satgar, 2018; Solon, 2018; among others). They point to the important pedagogical, political and organisational work that is needed for new imaginings for a socio-ecologically just future to take root. This is the work of educators, activists and scientists. There are many researchable questions for ALE enmeshed in these profound discussions and debates, such as: How do educators engage different communities of learners with taboo subjects such as 'a no-growth future'?

How can and should ALE respond to the climate crisis?

Having presented an overview of some of the layers that need to be considered when identifying ways in which ALE can and should respond to climate crises, I proffer suggestions towards an answer. I keep in mind the areas of individual and communal life in which ALE is entangled: health and wellbeing; employment and labour markets, including sustainable livelihoods; and social, civic and communal affairs, including arts and culture. I also use the experience of the Cape Town drought to animate ideas.

ALE within a lifelong learning philosophy and approach

A lifelong learning (LLL) orientation is fundamental to responding to the climate crisis, as people of all ages are affected, from birth to death. As one woman, standing in a queue for water in Cape Town, said, ‘I never thought I would be instructing my children not to flush the toilet unless absolutely necessary!’

Candy, Crebert and O’Leary (1994) highlight in a nutshell the following attributes of lifelong learners: an enquiring mind, a helicopter vision, a critical ability to evaluate information, a sense of personal agency and a repertoire of learning skills and abilities. These hold for any level of learning at any age. Moving from the individual to the organisational, essential characteristics of an LLL higher education institution demonstrate that the entire educational institution is affected if it adopts an LLL orientation. LLL needs to be concerned with people of all ages (lifelong) and with engagement with and in society at large (life-wide) (DLL, 2001). The overarching policy frameworks, the kinds of linkage and partnership that are negotiated, the research orientation, the curricula, the teaching and learning methodologies, the administrative policies and student support services are all implicated. The educators are required to be lifelong learners also, emulating the need to be curious, constantly learning, questioning and engaging with the world (Walters, 2012).

In the diffuse learning environments of home, work, the media and society in general, the indicators for learning cities (UNESCO, 2015) are instructive. As rapid climate change is a disruptor and can be turbulent, we do not know what is coming at us, so we do need to be open to learn and adapt fast. Building resilience through a LLL orientation at personal, organisational, community and societal levels will assist our collective abilities to respond. However, for these responses to be concerned with ‘just transitions’ (Satgar, 2018) rather than merely individual survival, we need, as Wallerstein (2009) urges, to have at the forefront of our consciousness and our actions the struggle against ‘the three fundamental inequalities of the world – gender, class, and race/ethnicity/religion’. As the Cape Town drought illustrates, water justice is very much a gender, race and class issue, with middle-class people needing to learn from poor and working-class people how to live with less, thus inverting the taken-for-granted knowledge hierarchy. The ways we confront such deep prejudices and discrimination within our society and ourselves call for life-deep learning (Walters, 2011).

Issues of water and sanitation are deeply personal and political, as illustrated by Govender (2016) with examples of women and girls being sexually assaulted when walking to toilets and taps far from their homes; and Michael Komape, a six-year-old, drowning in a pit latrine at school. Therefore ALE responses to the climate crisis require a lifelong, life-wide and life-deep orientation and approach permeated by socio-ecological justice sensibilities and commitments.

ALE in times of 'fake news' or 'post-truth'

In the midst of a crisis, it is easy for people to panic, to get caught up in a 'blame game'. As we have seen with the Cape Town drought, there have been periods when different levels of government have blamed each other for the dire situation; different political parties want to score political points; or opportunists want to discredit individual leaders (Yates 2018). There have been moments when some citizens have questioned whether there is in fact a critical water crisis at all, even though the photographs of the near-empty dams seem to be irrefutable proof of the situation. It is fertile ground for 'fake news'.

The importance of credible, politically neutral interlocutors from universities or civil-society organisations (CSOs) is proving vital. For example, the World Wildlife Fund (WWF South Africa) is disseminating helpful fact sheets relating to the water crisis weekly through the public and social media. In turn, these fact sheets are taken up in educational or work settings for discussion. Public meetings are being held by different faith-based organisations, professional bodies, CSOs and businesses at which water scientists engage citizens with critical questions such as: How can we rethink the water catchment area?; What are the best ways to augment the water supply?; or What are the best ways of storing or using water for domestic or industrial purposes? The provincial premier and mayoral committees have been communicating regularly with the citizens on the latest developments through local radio stations, the City of Cape Town website and social media, and the public have been encouraged to share their latest water-saving innovations on talk radio. The veracity of the information being circulated regularly by credible people and organisations is essential.

In order to work against 'fake news', commentators and educators are stressing the importance of various forms of critical literacy (Candy, 2002) to be able to 'read the world' and check 'fake news'. In general, citizens need to be encouraged to be sceptical about what they read and to pause before forwarding the next sensational 'fact' that comes across social media. For educators, the need to inculcate critical scepticism is not new, but we need now to engage with agnotology – the study of the deliberate propagation of ignorance – by asking who benefits from circulating particular ideas so that we limit our complicity in the spread of 'fake news'.

ALE resisting authoritarianism?

Authoritarianism in various forms creates perfect conditions for 'fake news' to be propagated and flourish. A participatory democratic culture that encourages questioning, curiosity and

broad-based involvement of citizens is likely to be an antidote. Debates about the disruption and turmoil created by climate change cannot be left to the few. The stakes are too high.

Managing water raises many related questions about other natural resources and forms of energy, as elaborated on in a seminar by sustainability expert, Mark Swilling (2017). It is in the entangled economic, political, social and cultural context that debates about climate change land. It is highly charged politically and economically. It is therefore no wonder that governments or corporations do not necessarily want to encourage citizen participation – clandestine deals made in secret out of the public gaze are more common. The SDGs and what happens to them at a national or a global level need to be understood in this context (Guerrero, 2018). Globally, environmental activists or educators are being murdered every week, and many disappear without trace. By August 2017, 117 had been killed in that year alone (Ulmanu, Evans & Brown, 2017).

Many social movements and CSOs that are working for climate justice are only too aware of the fraught political context within which they are working. Popular education, which has its roots in the struggles for liberation in Latin America, Africa and Asia, is a strand of ALE from which much can be gleaned in the context of the climate crisis. We have written elsewhere (Burt, James, Von Kotze & Walters, 2017; Von Kotze & Walters, 2017) that popular education thrives in times of heightened socio-economic and political contestation and in opposition to poverty, racism, misogyny, war and climate injustice, among other negatives. It is integral to organising against authoritarian practices.

An example of contemporary popular education interventions relating to struggles for energy justice in the climate crisis in Cape Town is being led by the Southern African Faith Communities Environmental Initiative (SAFCEI), the Right2Know, Popular Education Programme and other CSOs. The catalyst for organising has been the allegedly corrupt trillion rand nuclear deal which has been enmeshed with state capture and the power utility, Eskom, among other individuals and institutions (Fig, 2018). Activities have included: workshops with working-class communities on sources of energy, including coal, natural gas, nuclear and renewables, in relation to electricity cost; weekly protests outside Parliament; public protests on the bridges leading into the city; and supporting communities in their submissions to the energy regulator to oppose government plans to build new nuclear power stations. Communities in the Northern Cape, which are affected by nuclear waste dump sites, and in the Karoo, where there are threats of fracking, have also participated. The Northern Cape and the Karoo are particularly arid regions of the country and water scarcity and contamination are key concerns. These popular education initiatives have been helping to connect people and their struggles, showing how all the issues are interlinked.

Popular education is overtly political, critical of the status quo and committed to ‘progressive social and political change’. It is both a theory and a practice of social action (Burt et al., 2017). Popular education seeks to draw on the collective knowledge and experiences of life’s struggles and activism, on historical understandings, in order to develop the coherent theory

and practice needed to challenge the individualised, commodified socio-economic world. Structural and systems change require collective struggle. Through opposition to the 'corrupt nuclear deal', communities across social classes have been drawn into questioning the options for the most effective energy mix for the country. This, in turn, has begun to raise deeper, longer-term questions about the various future energy options and the kind of society that can be envisaged. The learning that occurs in struggle may alter people's understanding fundamentally, as they experience their own agency and collective power in affecting change. This is why popular education is such an important part of ALE's response to the climate crises.

Building capacities in the short, medium and longer term

Raskin, in *Journey to earthland* (2016), suggests that we need to combine idealism and realism in ways that reinforce our hope with scientific rigour as we co-create futures. It is clear that we need a range of adaptive skills, expertise and commitments; all enhanced through processes of ALE, to solve the sticky, tricky climate-crisis issues and problems.

In the contemporary moment of drought in Cape Town, for example, we need: thousands of 'barefoot plumbers' who can respond quickly to stop water leaks; thousands of 'hackers' to clear away thirsty alien vegetation; water scientists, along with other environmental scientists, to research and guide decisions concerning water augmentation and reduction strategies; journalists and savvy communicators to assist with the constant flow of reliable information to citizens; economists to work out the most cost-effective use of limited resources; political scientists and sociologists to analyse and assist with understanding the intended and unintended consequences of various strategies; educators to deepen critical understandings of what is happening and why, and to help change behaviours; artists and cultural workers to educate, create, play and encourage ways of understanding, responding to and dreaming of alternatives; activists and organisers to mobilise communities; health workers to treat and educate patients about how to stay healthy under new conditions; civil servants to keep systems running; politicians to negotiate between different levels of government; engineers and ICT specialists ... the list continues. The climate crisis requires the collective efforts of all sectors and levels of society to work and learn together to produce the combined idealism and realism in ways that reinforce our hope underpinned by scientific rigour.

In terms of dealing with the climate crisis at a national level over the short to medium term, perhaps lessons can be learnt from responses to other crises, such as to the HIV and AIDS crisis in South Africa in the 1990s. Then, it will be recalled, different sectors mobilised institutional support for targeted strategies of broad consciousness-raising. Other responses included scientific research and development; mass media campaigns; continuing education for health professionals; and so on. These grew out of the mass mobilisation of millions of people by the Treatment Action Campaign (TAC). This social movement helped to concentrate the collective mind and was an essential element in forcing the issues onto the government, business and civil society's agendas in support of those affected and infected (Robins, 2008).

Other generative literature to turn to at this time is that of learning cities and communities (UNESCO, 2015), which elaborates what it takes to embed LLL approaches across formal and non-formal education, training and diffuse learning environments of society as a whole.

Learning from the drought: Personal reflections

The drought has certainly been my teacher. In this regard I have become a voracious and committed adult learner as everyday behaviours are rethought and adapted to accommodate new water-saving strategies – we have become a small drought-mitigation learning community. Water management demands the reallocation of time for filling buckets, topping up cisterns, emptying basins after showers and using the grey water carefully to maximum effect. Money flows in the household have shifted to accommodate new water tanks, a borehole and irrigation systems, with my partner teaching himself new plumbing, electrical and garden irrigation skills from the Internet or through conversations with peers. Our diet is influenced by what vegetables flourish under water-stressed conditions. Educating guests to new rules within this water-saving homestead finds humorous messaging in bathrooms and induction processes when they arrive to stay for a few nights – learning to live in drought conditions is indeed very personal.

My everyday reading of news or listening to the radio is shaped to some degree by the drought. I am drawn to learn more about the political economy of water and to glean more from people who are not middle-class, highly educated people like me. The classed, raced and gendered nature of the drought is obvious – working class and poor women and men, the majority of whom are black, have different issues from me and from one another; they are engaging with the drought from very different experiences. I am aware of the gendered roles in my own household. I attend seminars, participate in social actions and constantly question what form and shape a ‘water-just’ city should look and feel like; I question how we can use the drought collectively as our teacher, so that we emerge as a fairer and more just society. How do we sediment the lessons of changed relationships with water into our individual and collective lives once the immediate crisis is over? What can we learn from nature as we do this?

The drought as teacher is reinforcing my understandings of the connections between all forms of energy, and the implications these choices have for the future shape of society, both locally and globally. The urgency of confronting the ‘elephants in the room’, if we are to sustain life on the planet, has become even more urgent. I concur with Guerrero when she says that solving the climate crisis affects all aspects of society – the economy, technology, trade, equity, ethics, security as well as relations within and between countries. She emphasises the need to:

... take responsibility of educating oneself and being a conscious political subject, organising, mobilising, forging unities and exposing the false solutions peddled by those who created them in the first place. The work of questioning reality and concepts, asking who wins and who loses in various processes and who gains from injustices, is a key component of building alternatives. It is a complex and challenging task, and not one that can be comfortably executed (Guerrero, 2018:43).

Concluding thoughts

Klein (2014) describes the climate crisis as a confrontation between capitalism and the planet. This implies that virtually everything as we know it has to be rethought and relearned. It challenges us personally and collectively to rethink how we live, what we value and what we stand for. It demands that we have concern for those with little or no voice in governance, the poor and the unborn (Guerrero, 2018:38). It calls for new and imaginative thinking across all spheres of economic, social, environmental and cultural life. It encourages us all to be lifelong learners by seeking new answers to old questions together with others across sectors, social classes and disciplines. As educators, besides educating ourselves, we can enhance opportunities for others to learn about the climate crisis.

The political contestations over the future are fierce. The majority of people need to be encouraged to participate in these struggles, as the learning that occurs in struggle may alter their understandings fundamentally as they experience their own agency and collective power in affecting change. As Paolo Freire said, 'We will make the path by walking it' (Horton & Freire, 1990); no one person or group has the answers to the intractable problems.

It is time to both resist that which is compounding the climate crisis today and also to dream; and to imagine alternative futures. ALE has a vital role to play in both.

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