

Art. #1459, 9 pages, <https://doi.org/10.15700/saje.v38ns2a1459>

## Exploring sustainability as a frame of mind: A multiple case study

 Krystle Ontong and  Lesley Le Grange

Department of Curriculum Studies, Faculty of Education, Stellenbosch University, Stellenbosch, South Africa  
krystle@sun.ac.za

In this article we discuss a multiple case study, which investigates the frames of mind on sustainability of six Grade Nine Natural Sciences and Social Sciences teachers at three different urban schools in Stellenbosch, South Africa. The article consists of a theoretical and empirical component. Regarding the former, we firstly discuss contestations around sustainability as a policy, and secondly what sustainability as a frame of mind entails. This is followed by the empirical component, which enabled us to: firstly, determine the existing frames of mind of teachers concerning sustainability; and secondly, explore implications of viewing sustainability as a frame of mind for education. In conclusion, we open up possibilities that sustainability as a frame of mind has for taking us beyond the discourse that informed the United Nations Decade of Education for Sustainable Development (UN-DESD).

**Keywords:** curriculum; education; environment; frame of mind; sustainability, teachers

### Introduction

Sustainability and education for sustainability are evolving concepts, which form part of ongoing debates within the field of environmental education. Since sustainability was first used in the English language in the 1970s, it has mainly been conceived of with reference to policy making. This view of sustainability has underpinned the United Nations Decade of Education for Sustainable Development (2005–2014). Bonnett (2002a) avers that conceiving of sustainability as policy is the reason why the concept remains ill-defined, vague and open to a wide range of interpretations, especially within discourses on education. Although policies have positively regulated the way in which companies do business by reducing their impact on the environment and “going green,” the jury is still out on whether such policies will lead to significant change.

It is sobering to note that even if all companies in the developed world were to achieve zero emissions by the year 2020, the earth would still be stressed beyond its carrying capacity (Hart, 1997). Increasingly, the scourges of the late twentieth century – depleted farmland, fisheries, urban pollution, and poverty are spilling beyond geopolitical borders. Much of the responsibility for reversing the planet’s unsustainable course might lie with the world’s economic enterprises, and in governments producing innovative public policies. However, this will not bring about a new order of things, and ultimately might not change unless sustainability is viewed differently. Therefore, we invoke Bonnett’s (2002a) alternative conception that views sustainability as frame of mind, rather than as policy.

Specifically, we focus on this alternative conception of sustainability and its cultivation through formal education. We argue that in order to cultivate sustainability as a frame of mind in schools, it may be necessary first to determine teachers’ existing frames of mind regarding sustainability before suggesting possible educational interventions that could deepen their habits of mind in relation to sustainability. It is against this background that this article reports on an investigation into the frames of mind of South African Social Sciences and Natural Sciences teachers in relation to their perception of sustainability. However, first we discuss sustainability as policy to show how this conception is problematic at different levels.

### Sustainability as a Policy

Sustainability as policy relates to an invocation of sustainable development by governments, business and supranational organisations. Robinson (2004) argues that the notion of sustainable development is attractive to governments and business because it reflects a more incremental and managerial approach. He further asserts that the fundamental division on terminological grounds between sustainable development and sustainability relates to the fact that Non-Governmental Organisations (NGO) and academic environmentalists regard development to be synonymous with growth. In other words, sustainable development means ameliorating, rather than challenging continued economic growth. Instead, the term ‘sustainability’ focuses attention where it ought to be, namely on the ability of humans to continue to live within environmental constraints. This is why sustainable development will be subjected to critique in this article, and why sustainability is the preferred term.

Sustainability as a policy refers to the invocation of sustainable development in guidelines on the environment produced by inter-governmental conventions over the past three decades, or any influence external to human’s direct experience with nature. The United Nations Decade of Education for Sustainable Development (2005–2014) also focused on sustainability as a policy. This policy discourse also informs the United Nations’ post DESD agenda, and its formulation of 17 sustainable development goals. The 2030 Agenda for Sustainable Development is a universal agenda to wipe out poverty through sustainable development by 2030 (United Nations Educational, Scientific and Cultural Organization [UNESCO], 2015). The Education 2030 Framework for Action outlines how to translate into practice, at national, regional and global level the

commitments made by governments and partners. As a means to accelerate this initiative, a follow-up programme to the Decade of Education for Sustainable Development (ESD) (2005–2014), namely the Global Action Programme (GAP) on ESD was promulgated. Being fully aligned with the implementation of the post-2015 agenda, the GAP aims to (a) “reorient education and learning so that everyone has the opportunity to acquire the knowledge, skills, values and attitudes that empower them to contribute to sustainable development” (UNESCO, n.d.-b). These initiatives once again highlight the strong emphasis on viewing sustainable development as policy.

However, Runalls (1986) claimed three decades ago that even if the institutional and policy goals of the years 1970–1980 had been achieved, most developing countries would be only marginally better off than they are today. He mentions that the reason for this is that although governments, environmentalists and other agencies kept their eye on the environmental ball during the 1970s and the early 1980s, events have demonstrated that they have been watching the wrong ball. Too much emphasis has been placed on the environmental impacts of investments such as controlling pollution and conserving resources. According to Nagy (1981), in the 1980s the environment had already been deteriorating in certain areas, and there was uncertainty about where to place the thresholds of nature’s<sup>i</sup> tolerance. The recent developments described above seem to have similar outcomes in common.

Today we are confronted with even greater environmental warnings and challenges, where it is possible to conclude that we face a planetary emergency. De Beer, Dreyer and Loubser (2014:2) state that worldwide, more than 270 babies are born every minute, and by 2050 the world population will reach the nine billion mark. Among the different world regions, Africa has been identified as the continent with the highest population growth rate in the world. Furthermore, the extinction rate of animals is increasing at an alarming pace and estimated to be 1,000 to 10,000 times greater than before human intervention (De Beer et al., 2014:3). Importantly, even though policies on sustainability have been developed at international and national levels over the past three decades, these policies have done very little to reverse the unsustainable course of society.

Now that the Decade of Education for Sustainable Development has ended, we have reached a critical point where the notions of sustainability and especially education for sustainability (sustainable development) may need to be re-examined and re-evaluated. Although we cannot reverse past policies, we may need to examine the reasons why recent policies have not

succeeded, and what the alternative is to address sustainability more productively within education. D’Souza (2002:24) suggests that before we look at formulating a new Agenda 21, we should first look at what was wrong with the previous Agenda 21. She also claims that the more the UN speaks of poverty-alleviation programmes, the more poverty seems to increase, and the more UN agencies speak of sustainability, the more the environment seems to deteriorate (D’Souza, 2002:24). Fifteen years later, this situation has not changed.

Since the Brundtland Commission Report, *Our Common Future*, was published in 1987, sustainable development has gained prominence in discourses on the environment. The report defined sustainable development as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (Brundtland, 1987:8). Defining sustainable development in this way has resulted in multiple complications at policy level. According to Bonnett (2003) this popular definition is problematic at a semantic, ethical and epistemological level. At a semantic level, society could simply interpret the term to mean sustainable economic growth. He asserts that sustainability as policy tends to advocate either anthropocentric or ecocentric ethical positions. Whereas sustainability as frame of mind caters for neither one of these ethical positions – in the sense that no transcendent ethical category is imposed onto nature – to be ethical is to be in the world and to cultivate modes of sensibility attuned to the more-than-human world (nature). In environmental ethics, anthropocentrism and ecocentrism are the extreme positions of a continuum concerned with the extent to which nature is the criterion of value. Anthropocentrism holds that nature only has value when it serves human ends – nature has instrumental value. Ecocentrism holds that the entire ecosphere has intrinsic value. There are also positions in between such as moral extensionism, which holds that value ought to be extended to all sentient beings, not only to humans (for a more detailed discussion, see Le Grange, 2013). Theocentrism holds that nature has value because it is God’s creation, and that humans ought to be good stewards of nature.

Moreover, on an epistemological level Bonnett (2002a, 2002b, 2003) mentions that sustainable development at a policy level strives to marry two highly desired yet potentially conflicting goals, namely conservation and development. Problems with these (policy) goals arise as soon as one asks the following questions: “Precisely what is to be sustained [...], at what level, and over what spatial and temporal scales?” (Bonnett, 2002b:11). Ought the focus to be on the balance of nature, on an ecosystem, on sustainable economic growth, or

on the maintenance of a culture? These ambiguities emphasise the internal contradictions, multiple interpretations, and vagueness of the term.

In short, one may conclude that viewing sustainability as a policy raises an array of complexities and that a reconceptualisation of the term may be needed. In view of this, we now turn to a discussion of an alternative view of sustainability, which is that it could be viewed as a frame of mind. We also prefer to use the term ‘sustainability education’<sup>ii</sup> rather than education for sustainability.

#### Sustainability as a Frame of Mind

The notion of sustainability as a frame of mind concerns the right relationship with nature, which conditions both our attitudes towards the environment, and our sense of our own identity (Bonnett, 2002a). This nature-orientated frame of mind fosters the idea that our underlying relationship with nature defines both ourselves, as well as our relationship with the world as a whole. Bonnett (2002b:2) explains that nature ought to be viewed in its most general sense as the “non-human, self-originary and self-arising aspects of the world.” Conceptualising nature in this specific way engenders the idea of nature as a dimension of human awareness – independent of human will, but not unaffected by it. In other words, nature is a fundamentally irreducible concept, which implies that the human attitude towards it will depend on the specific aspect of it we have in mind. Sustainability as a frame of mind is thus an integral element of authentic human awareness (Bonnett, 2002a, 2002b).

But what is meant by ‘frame of mind’? According to Stables (2002:1), this could either refer to a mood (“She’s not in a good frame of mind today”), or to something more durable, such as a disposition (“He always tends to avoid meeting strangers”). He continues by claiming that frames of mind are cultural constructs, which are open to change; however, that certain experiences can induce moods that can in effect stimulate our love and care for the natural world. When moods thus become habitual, they also tend to become dispositions (Stables, 2002:2). On the other hand, Bonnett (2003:683) refers to a frame of mind as a “general mode of engagement with the world through which the world as a whole is revealed to us ... it is more or less a conscious way of being in the world.” This requires a specific conceptual outlook, but also involves our sensing of things and encapsulates the affective, moral, aesthetic, imaginative and other receptions and responses, which Bonnett (2003:684) refers to as “a mode of sensibility.”

Although there are no prescribed steps in developing sustainability as a frame of mind, Bonnett (2002a:1) does mention certain key features that need to be considered. Firstly, he claims

that it involves a “genuine receptive-responsive openness to, and concern for nature.” In this sense, nature is viewed as those non-human, self-originary aspects of the world. Secondly, such a frame of mind is neither anthropocentric nor biocentric, and nature only has significance in human consciousness. Thirdly, sustainability as a frame of mind constitutes an integral element of authentic human awareness. The sustaining nature of consciousness is also the essence of sustainability, which involves letting things be as they are in themselves, so as to safeguard, preserve, and conserve them. In order to develop such a conceptual outlook requires the adoption of a different metaphysical basis. In the context of education, any changes in this regard might have to start with the teachers first, before attempting to cultivate sustainability as a frame of mind among learners (Bonnett, 2002a). The implications of the latter for education will be discussed later in the article. Against this backdrop we shall now discuss a multiple case study of six teachers and their frames of mind concerning sustainability.

#### Method

##### The Context of the Study

The six teachers who are the research subjects in this multiple case study work in three different schools in Stellenbosch, Western Cape, South Africa. Two teachers in each of the schools formed part of the study so that the context of three respective schools receives discussion. Schools were located in three different urban and socio-economic areas. The teacher to learner ratio at the different schools was as follows: School A - 1:30, School B - 1:26 and School - C 1:50. School A is located in an urban area, where most of the learners’ parents are from lower-middle-class backgrounds. Although this school is located in an area with a higher socio-economic status compared to School C, the learners were still predominantly poor and the school lacked basic resources (according to teachers at the school). School B is located in one of the affluent urban residential areas of Stellenbosch. Most of the learners attending this school are children of wealthy business people and professionals. The school is well equipped with resources and the conditions under which learners were taught were more favourable than in the case of schools A and C. School C, on the other hand, is located in a peri-urban area on the periphery of one of the townships<sup>iii</sup> of Stellenbosch. Most of the learners at this school stayed in shacks and were extremely poor. The conditions under which these learners received their education were less than desirable. Two main challenges that School C faced were over-crowded classes and a serious lack of resources. Important to note is that even though the contexts of the schools are described in detail here, the unit of analysis in each case was the teacher.

### Research Design

This multiple case study was based on the interpretive paradigm where the main knowledge interest was to understand teachers' frames of mind on sustainability. Terre Blanche, Durrheim and Painter (2006) claim that case studies are intensive investigations and are defined as ideographic research methods. These type of methods study individuals as individuals, rather than as members of a population. Case studies are not only descriptive in nature, but also have the advantage of allowing new ideas and hypotheses to emerge. In this study, the objective was to intensively understand each individual's frame of mind with regards to sustainability. This was only possible by accessing the consciousness of the teachers through use of semi-structured interviews. The idea behind this study was not to enable other researchers to replicate or generalise the study, but rather to recognise the uniqueness that each case represents.

### Sample

The sample consisted of six Grade Nine teachers at three different high schools. Purposive sampling was used to select two teachers at each school, one Social Sciences, and one Natural Sciences teacher. This was based on the assumption that the discipline taught by the teacher, might influence their frames of mind related to sustainability.

### Data Collection

Individual semi-structured interviews were conducted with six Grade Nine teachers at three different high schools in Stellenbosch. At each school two teachers were interviewed, one in the Social Sciences and the other in the Natural Sciences learning areas. Interview questions were given to a panel of experts in the field to ensure that the questions focused on what they intended to focus on, thus ensuring the content validity of the interview schedule. Face validity and member checking was used by returning to teachers, to confirm that what they responded was interpreted correctly. The interview method was employed to answer the empirical question: What are the frames of mind on sustainability of the Grade Nine Social Sciences and Natural Sciences teachers? Below is a sample of three interview questions posed to teachers:

1. What is special about the place where you live?
2. How would you feel if the place where you currently live gets destroyed?
3. What is your best memory of the place where you grew up?

### Data Analysis

The qualitative data that was gathered in this study was analysed according to the constant comparative method. This is a rigorous and inductive method in qualitative analysis where the researcher constantly

compares chunks of meaningful data with one another (Maykut & Morehouse, 1994). Lincoln and Guba (1985) assert that the constant comparative method has proven essential to rigorous analysis. We have used systematic coding as a means to group and re-group data into meaningful themes. These themes were constructed from the literature reviewed and the data analysed where it was argued that sustainability as a policy tends to be either anthropocentric or ecocentric.

### Ethical Considerations

According to Resnik (2015) ethics may be defined as a method, procedure, or perspective for deciding how to act and for analysing complex problems and issues. Burgess (1989) argues that in gaining access in order to collect data, the researcher ought to adhere to guidelines such as informed consent, confidentiality and anonymity. In this study, we applied for permission from the Western Cape Education Department (WCED) to conduct research in schools and to the Ethics Committee (Human Research) of Stellenbosch University for ethical clearance. Upon receiving ethical clearance, the researcher (first author) met with school principals and teachers in person to inform them about the nature of the study. After attending to all their questions voluntarily participation was agreed to by each of the six teachers. For this purpose, each participant was required to sign a letter of informed consent to partake in the study.

The researcher also explained to the participants that anonymity and confidentiality would be adhered to throughout the study, in order to protect their identities and rights during and after the research process. Pseudonyms were used in lieu of the actual names of the teachers.

### Trustworthiness

Lincoln and Guba (1985) expanded the notion of reliability and validity to be more relevant to qualitative research studies. They therefore introduced four dimensions of trustworthiness, namely, credibility, transferability, confirmability and dependability. Credibility concerns how confident the qualitative researcher is in the truth of the research findings. Transferability relates to how the qualitative researcher demonstrates that the research study's findings are applicable to other contexts. Confirmability refers to the degree of neutrality in the research study's findings. Dependability meanwhile refers to the extent to which the study could be repeated by other researchers and would produce consistent findings. Confirmability featured strongly in this study by returning transcripts of and interpretations of interviews to participants for member-checking, where by so doing, researcher bias was reduced.

## Results

Based on the analysis of the data, three themes regarding the teachers' views and frames of mind on sustainability emerged. The themes are: teachers' dominant views on sustainability; the role that their upbringing played in shaping their views of the concept; and how they addressed the concept through their teaching. What will be evident is that teachers' dominant views on sustainability are informed by transcendent influences (such as religious beliefs, subject disciplines and/or government policy) in lieu of more direct experiences with nature (being in the world). Therefore, we invoke the categories anthropocentric, ecocentric and theocentric in analysing and interpreting teachers' views on sustainability. In the discussion on teachers' upbringing, we see evidence of teachers' frames of mind; as well as their habits of mind shaped by their experiences with/in nature in their formative years. Furthermore, it will be evident that teachers' pedagogies on sustainability are informed by both their views of (orientations towards) sustainability and their frames of mind on sustainability. These themes will be discussed next.

### Teachers' Dominant Views on Sustainability

Teachers' frames of mind revealed a combination of anthropocentric, ecocentric, and theocentric orientations regarding the term sustainability. Although this was the case, the Social Sciences teachers displayed more anthropocentric leanings when compared to the Natural Sciences teachers. When the Social Sciences teachers were asked what their understanding of the term sustainability was, all of them basically defined the concept in terms of human needs that had to be met – placing human beings at the centre, with the responsibility to conserve the environment for future generations. One of the participants (a Social Sciences teacher from School A) stated: *“First development is about improving lives of people [...] the next generation, must also benefit from it. Sustainable development involves social and environmental development; it's about meeting the needs of people”* (translated from Afrikaans). Very little reference was made to nature, ecosystems or the natural environment at first. Another Social Sciences teacher (from School C) mentioned that it is justifiable to use plants and animals as a survival mechanism and for cultural practices in his religion. He stated: *“God gave us plants and animals so that we can survive [...] We slaughter for religious purposes [...] when a child is born [...] when boys go to circumcision ...”*

Although the last statement shows a strong anthropocentric view of the environment, it also introduces theocentric learnings. During the latter stages of the interviews, theocentric traces became more evident, as a few teachers began referring to God when they were asked to elaborate on their

understanding of sustainability and the environment. One participant (a teacher from the Natural Sciences at School A) said: *“I view the environment as God's glory, God's creation of Jesus. It is extremely beautiful and precious [...] Personally I am in love with nature, because experience God there - and that is important.”* Another teacher (from the Social Sciences, school C) also explained: *“In African religion people believe differently depending on the area, because in my family, I grew up believing that the ancestors were the ones who communicate with God. God gave us plants and animals so that we can survive.”* He further mentioned: *“We seek God's divinity in everything we do.”*

Besides the anthropocentric and theocentric traces, two teachers from the Natural Sciences learning area also displayed more ecocentric leanings in their responses. One of the teachers stated: *“The bio-physical dimension is the most important to me because it was there before the other dimensions. And if the bio-physical is not right, then nobody can manage the economy; politics and social”* (a teacher from the Natural Sciences, School B). One can thus infer that teachers' views on sustainability (orientation to sustainability) comprised elements of anthropocentrism, ecocentrism, and theocentrism. Even though both the Social Sciences and Natural Sciences teachers displayed theocentric traces, one difference was that the Social Sciences teachers displayed greater anthropocentric leanings and the Natural Sciences teachers showed greater ecocentric leanings. This intertwined and nuanced perspective of some of the teachers may link to White's (1967) thesis that environmental problems have their roots in the Judeo-Christian teleology, but that their solutions might also lie in religion; that is, if the Judeo-Christian faith is rescued from its anthropocentric proclivities. Furthermore, the reference of the one teacher to ancestors is noteworthy. In African tradition, there is an oneness of past, present, and future generations, which could serve as the basis for developing an environmental ethic – what present generations do has an impact on past and future generations (see Le Grange, 2012). So too is there a connectedness of everything in the cosmic, which is at the heart of African spirituality.

### The Role Which the Upbringing of Teachers Played in Shaping their Views of Sustainability

When teachers were asked which factors played a role in shaping their view on sustainability, one key factor that stood out was their upbringing. According to one Social Sciences teacher (from School A) who grew up very poor in the Eastern Cape Province, survival was the aim at the end of each day. He said: *“[...] I can remember on the farm where we used to work as children, there were*

*certain alien plants which the farmer asked us to remove and to throw away [...] but my mum would then collect it and use it to build a huge place for us to sit underneath [...]. What an example of sustainability! So my whole life contained sustainability [...] the subject which I teach only refined it, but when I look back it was always a part of me, I just didn't have the academic words for it'* (translated from Afrikaans).

Another Social Sciences teacher from School C stated that his parents played a significant role in modelling sustainability in their house where he grew up. He mentioned: *"Water was very precious in our house. We didn't have running water in our house, we were just told that we should not waste it. We had to go and fetch water far away. I was taught the value to appreciate water and this value still plays a phenomenal role in my life today. I don't bath, I shower or use a bucket."* Here we clearly see a frame (habit) of mind that has developed that could be traced back to early childhood experiences with nature.

#### How Sustainability is Being Taught

When teachers were asked what their views were on how the term sustainability was used in the Revised National Curriculum Statement (RNCS)<sup>iv</sup> with regard to the specific learning area that they taught, three out of the six teachers were not aware of the fact that the concept of sustainability featured in their particular learning area. One participant stated the following about the RNCS and how it addresses sustainability: *"It is contained in the RNCS, but it is a bit too vague. They don't tell us exactly what to do, they should tell us more specifically what to do [...] make it more compulsory. And some teachers if they don't want to do it, they skip that little part [...] so it depends on what your liking is. You are not going to get into trouble if you don't teach sustainable development"* (Social Sciences teacher from school C). This participant is suggesting that when teachers' views are not aligned with sustainability and the official curriculum only gives scant attention to sustainability concerns, their efforts to cultivate sustainable frames of mind in learners would be thwarted. Therefore, greater alignment is needed between teachers' views/frames of mind and the official curriculum (Curriculum Assessment and Policy Statements or CAPS), by elaboration of sustainability concerns in the curriculum and by enhancing teachers' frames of mind on sustainability through professional development programmes.

Despite this being the case, what they taught made links to the environment and sustainability to a certain extent. Some of the responses were as follows: *"I incorporate the environment into my work schedule. I incorporate global warming and then I explain to them that this is pollution. I will*

*then give them an activity on global warming. Fortunately learners have access to technology and other resources to read more on sustainability ... they can also just go outside and observe the beauty of sustainability"* (Natural Sciences teacher from School B). Another Social Sciences teacher from School C mentioned: *"It is more theoretical and learners only believe when they see something, but due to a lack of resources they can't. It should be more practical because most of the learners don't have an idea what polluted water looks like, so it would have been nice to take them and let them do something. Organising such activities for a big group is problematic and with a class of 55 learners it is difficult."* Transport is also expensive. This statement points to the complexity of implementing a national curriculum that does not cater to the realities faced by local communities. If sustainability as a frame of mind is to be cultivated, then school-based/community-based initiatives are essential.

One teacher in the Natural Sciences from School A mentioned that he first teaches the concept to learners in order for them to understand it. Then he starts to live out the idea of sustainability. He stated: *"I told the learners to identify a problem, for example, hunger or poverty in the community, etc. They had to investigate the causes of the problem and how one could address it. This was a practical project, which required of them to start a vegetable garden. The project had two components: first they had to sustain the garden at home as well as the one at school. Secondly, we have incorporated the idea of saving water. They had to prove that they use less water at home, despite the increase in temperature"* (translated from Afrikaans). Although some of the teachers were not aware that sustainability featured in the RNCS, their teaching proved that they did integrate the environment/sustainability concerns in their classroom practices.

Based on the above responses, it is evident that teachers had some insights into issues related to sustainability but that these needed elaboration. There could be various reasons why their engagement with the notion of sustainability was constrained. For example, the different years in which training and qualifications were obtained (ranging from 1977–2005) could have been a contributing factor to the way in which teachers approached sustainability, because they might teach only what they know, or what is prescribed.

The above three themes have demonstrated that life experiences, such as the upbringing of teachers, influenced not only how they conceived sustainability, but also how they approach it in their teaching. Where and how they grew up (their socialisation) mainly shaped their views (anthropocentric, ecocentric, theocentric). The learning area in which they teach also played a role in

shaping their views, which in turn influenced how they addressed the concept pedagogically in their classrooms. So too are teachers' pedagogies influenced by their frame of mind on sustainability, as evidenced by Natural Sciences teacher at School A, who got learners to do investigations involving direct experiences with the human and more-than-human worlds. The following section explores the implications of this discussion for education.

## Discussion

### Educational Implications

What are the implications of the findings of this multiple case study for education? In order for sustainability to be conceived as a frame of mind instead of as a policy, it might firstly be important for teachers to understand their current frames of mind and, if necessary, adjust these in the interests of promoting sustainability. From the interview excerpts, one can infer that the four main contributing factors that led to the formation of teachers' frames of mind on environment/sustainability were: (a) the socialisation of the teachers; (b) the teachers' spiritual orientation to life; (c) the prescribed curriculum; and (d) the context of schools. Although these four factors are interlinked, (a) and (b) proved to be more prominent in shaping the frames of mind of teachers – more than the content prescribed in the national curriculum.

The strong influence of upbringing and spiritual beliefs in shaping teachers' frames of mind is confirmed in Tanner's work on significant life experiences. According to Tanner (1998:399), if certain kinds of early experiences are important in shaping adults' attitudes toward the environment, then environmental educators might to an extent replicate those experiences in the education of the young. In short, the multiple case study highlights the importance of upbringing and religion or spirituality in shaping views on environment, including the issue of sustainability. Yet these views are not taken into consideration by policy makers, curriculum developers, and those involved in the education of teachers. This suggests that it might be important for policymakers and teacher educators to take influences such as the upbringing and spirituality of teachers into consideration when curricula, professional development programmes, and other policies on sustainability are developed.

The way in which the concept sustainability is structured and emphasised in the prescribed curriculum directly influences the way in which teachers address sustainability in their classrooms. Four out of the six teachers admitted that the RNCS addresses the concept of sustainability vaguely.

Even though the CAPS is more prescriptive when compared to the RNCS, there is still not enough emphasis placed on the concept of sus-

tainability. For instance, regarding the Social Sciences, in the Geography section for Grade Nine, CAPS only requires that four hours be spent on the topic of 'opportunities for development,' which includes economic, social, and environmental factors (Department of Basic Education, Republic of South Africa, 2011:30). However, this is not enough time for teachers to explore this concept in depth with learners. More elaboration on the concept is required. Having said this, we do accept that curriculum reform on its own does not guarantee pedagogical change and modifications, where much depends on what teachers do and think and on their views, or frames of mind. Concrete ideas that might develop sustainability as a frame of mind would require of teachers to move out of their comfort zones. Teachers may start by taking learners out into the natural environment daily and ask them to find a place of solitude – a space where they can connect with nature and themselves for a few minutes. An experience like this should always be followed up by reflective questions, for example: Why did you choose the specific place? How did you feel in that space? Why did you feel like that? How would you feel if that place is destroyed in the near future? Here, the learners not only start to realise the importance of conserving, preserving and sustaining nature beyond themselves, but come to experience a sensibility of their oneness with nature. In this way, sustainability as a frame of mind as an integral element of authentic human awareness starts to take form among learners. These kind of experiences depend solely on what teachers open up to learners and not on what is explicitly found in the policy documents.

However, should policy documents such as CAPS be revised to promote sustainability more positively, and align with teachers' views and frames of mind in relation to sustainability, another impeding factor remains; namely the poor, under-resourced conditions of many South African schools. The socio-economic conditions of schools do impact on how teachers teach sustainability. Under-resourced schools and the poor living conditions around these schools limit what teachers can do in teaching sustainability and to foster a nature-oriented frame of mind among learners. In the case of School C, for instance, the 'natural' environment consists of a deteriorating rugby field, with hardly any trees or other natural elements to foster aesthetic experiences in nature. In contrast, the teacher at School B claimed that learners could read more on sustainability through the resources and technology made available at the school or they could 'experience the beauty of sustainability' outside of the classroom. This points to the inequalities of the South African schooling system and the disparate opportunities afforded to different learners to engage sustainability concerns.

Developing sustainability as a frame of mind among learners depends on creating the conditions conducive to doing so. This implies extending pedagogy beyond the classroom; taking learners outside of the classroom to experience nature first hand (irrespective of the conditions of the school); integrating their spirituality and upbringing in pedagogy; and using their sense of place as a starting point in teaching and learning.

According to Bonnett (2002a, 2002b, 2003), a totally different metaphysical basis is needed for the development of sustainability as a frame of mind. This implies that teachers have to rethink their being and knowing in the world, and especially their current views and frames of mind on sustainability. Stables and Scott (2002) assert that although it is not possible to re-invent the educational system and teachers' expertise and attitudes, it is in fact possible to build on existing strengths. Teachers do have the capacity to improve, adjust, transform and develop their current frames of mind based on the elements Bonnett (2002b:2) is cited as having referred to earlier. The multiple case study shows that there are traces of teachers' views and frames of mind that are positively disposed towards sustainability concerns, and we suggest that these could be harnessed (brought forth) through professional development programmes offered in the interest of sustainability. For these purposes, the GAP on ESD might be a useful starting point to consider, taking into account that one of its objectives is "to strengthen education and learning in all agendas, programmes and activities that promote sustainable development" (UNESCO, n.d.-b). Furthermore, the GAP is strategised around five action areas, where capacity building in education (including academics, civil society and teachers among others) constitutes one area (UNESCO, n.d.-a). Even though the GAP could be regarded as a policy intervention, the strong emphasis on education, sustainable development, teachers and capacity building signify the potential spaces for collaborating with teachers and embracing their views on sustainability.

### Conclusion

In this article we have argued for a revised view on sustainability that shifts the angle of vision from policy to frame of mind. However, the case study shows that even though teachers' dominant views on sustainability are informed by the notion of 'sustainability as policy,' the data shows that there are traces of positive frames of mind of teachers in relation to sustainability, which arise from their direct engagement with nature in their formative years. We pointed out that sustainability as a frame of mind is nature-orientated, and requires that humans develop and maintain a right relationship with nature for them to flourish in the world. Therefore, we are suggesting that it would be

apposite to first establish the views of sustainability (orientations to sustainability) which dominate teachers' thinking, and also to find traces of frames of mind that teachers might have cultivated in relation to sustainability. Moreover, the latter should be harnessed in teacher development programmes so that teachers do not only form views on sustainability based on (policy) texts, but frames of mind interpellated through direct experiences with nature, so that they can open this up to learners too. Finally, sustainability as a frame of mind is productive, and averts feelings of guilt and failure, as is the case when policies are not implemented.

### Notes

- i. By nature we mean the more-than-human-world.
- ii. Le Grange (2017) argues that sustainability education is a more useful signifier than education for sustainability because it is non-instrumentalist.
- iii. In South Africa, the term township and location usually refers to the (often underdeveloped) urban living areas that, from the late 19th century until the end of apartheid, were reserved for non-whites (black Africans, coloureds and Indians). Townships were usually built on the periphery of towns and cities.
- iv. At the time of the study the RNCS was still used. Although CAPS has replaced the RNCS, the insights taken from the latter are still relevant for CAPS. CAPS is the current Curriculum Assessment and Policy Statement used in public schools in South-Africa.
- v. Published under a Creative Commons Attribution Licence.

### References

- Bonnett M 2002a. Education for sustainability as a frame of mind. *Environmental Education Research*, 8(1):9–20.  
<https://doi.org/10.1080/13504620120109619>
- Bonnett M 2002b. Sustainability as a frame of mind-and how to develop it. *The Trumpeter*, 18(1):1–9. Available at <http://trumpeter.athabasca.ca/index.php/trumpet/article/view/115/120>. Accessed 26 August 2018.
- Bonnett M 2003. Chapter 9. Education for sustainable development: Sustainability as a frame of mind. *Journal of Philosophy of Education*, 37(4):675–690.
- Brundtland GH 1987. *Our common future* (Report of the World Commission on Environment and Development). New York, NY: United Nations. Available at [http://www.exteriores.gob.es/Portal/es/PoliticaExteriorCooperacion/Desarrollosostenible/Documents/Informe%20Brundtland%20\(En%20ingl%C3%A9s\).pdf](http://www.exteriores.gob.es/Portal/es/PoliticaExteriorCooperacion/Desarrollosostenible/Documents/Informe%20Brundtland%20(En%20ingl%C3%A9s).pdf). Accessed 7 September 2018.
- Burgess R (ed.) 1989. *The ethics of educational research*. New York, NY: The Falmer Press.
- De Beer J, Dreyer J & Loubser C 2014. Environmental issues and risks. In CP Loubser (ed). *Environmental education and education for sustainability: Some South African perspectives* (2nd ed). Pretoria, South Africa: Van Schaik.
- Department of Basic Education, Republic of South Africa 2011. *National Curriculum Statement (NCS). Curriculum and Assessment Policy Statement: Senior Phase Grades 7–9. Social*

- Sciences. Pretoria: Author. Available at [https://www.sahistory.org.za/sites/default/files/file%20uploads%20/caps\\_gr\\_7-9.pdf](https://www.sahistory.org.za/sites/default/files/file%20uploads%20/caps_gr_7-9.pdf). Accessed 3 September 2018.
- D'Souza R 2002. Sustainable development or self determination? Asking the hard questions about the World Summit on Sustainable Development (WSSD). *Social Policy*, 33(1):23–26. Available at <https://poseidon01.ssrn.com/delivery.php?ID=935027064086095004091110081095119100038012072004010029087017071093006069071119068067106096003126050111125095077080115022096090019022087003054125029101094125073102004009032125028076092016122027122087016007103082073111025031010072070024004126088085083&EXT=pdf>. Accessed 26 August 2018.
- Hart SL 1997. Beyond greening: Strategies for a sustainable world. *Harvard Business Review*, 75(1):66–77.
- Le Grange L 2012. *Ubuntu, ukama*, environment and moral education. *Journal of Moral Education*, 41(3):329–340.
- Le Grange L 2013. The politics of needs and sustainability education. In RB Stevenson, M Brody, J Dillon & AEJ Wals (eds). *International handbook of research on environmental education*. New York, NY: Routledge.
- Le Grange L 2017. Environmental education after sustainability. In B Jickling & S Sterling (eds). *Post-sustainability and environmental education*. New York, NY: Palgrave Macmillan.
- Lincoln YS & Guba EG 1985. *Naturalistic inquiry*. Newbury Park, CA: Sage.
- Maykut P & Morehouse R 1994. *Beginning qualitative research: A philosophic and practical guide*. London, England: The Falmer Press.
- Nagy LV 1981. *Environment Protection Committee of the Patriotic People's Front, Hungary*. WCED public Hearing, Moscow, 8 December.
- Resnik DB 2015. *What is ethics in research and why is it important?* Available at <https://www.niehs.nih.gov/research/resources/bioethics/whatis/index.cfm>. Accessed 3 February 2018.
- Robinson J 2004. Squaring the circle? Some thoughts on the idea of sustainable development. *Ecological Economics*, 48(4):369–384. <https://doi.org/10.1016/j.ecolecon.2003.10.017>
- Runalls D 1986. *International institute for environment and development*. WCED Public hearing, Ottawa, 26–27 May.
- Stables A 2002. On the making and breaking of frames in pursuit of sustainability. *The Trumpeter*, 18(1):1–10. Available at <http://trumpeter.athabasca.ca/index.php/trumpet/article/view/119/1271>. Accessed 25 August 2018.
- Stables A & Scott W 2002. The quest for holism in education for sustainable development. *Environmental Education Research*, 8(1):53–60. <https://doi.org/10.1080/13504620120109655>
- Tanner T 1998. Choosing the right subjects in significant life experiences research. *Environmental Education Research*, 4(4):399–417. <https://doi.org/10.1080/1350462980040404>
- Terre Blanche M, Durrheim K & Painter D (eds.) 2006. *Research in practice: Applied methods for the social sciences* (2nd ed). Rondebosch, South Africa: University of Cape Town Press (Pty) Ltd.
- UNESCO n.d.-a. *GAP strategy*. Available at <https://en.unesco.org/gap/implementation>. Accessed 10 July 2018.
- UNESCO n.d.-b. *Global action programme on education for sustainable development*. Available at <https://en.unesco.org/gap>. Accessed 10 July 2018.
- UNESCO 2015. *Leading education 2030*. Available at <http://www.unesco.org/new/en/kathmandu/education/leading-education-2030/>. Accessed 10 February 2017.
- White L Jr 1967. The historical roots of our ecologic crisis. *Science*, 155(3767):1203–1207. <https://doi.org/10.1126/science.155.3767.1203>