

# Policy Design for Non-anthropocentric Pathways to Protect Biodiversity and Regenerate the Land

**Janet Judy McIntyre**

<https://orcid.org/0000-0001-7733-1228>

Flinders University, Australia

[janet.mcintyre@flinders.edu.au](mailto:janet.mcintyre@flinders.edu.au)

## Abstract

This article is a thinking exercise to re-imagine some of the principles of a transformational vocational education and training (VET) approach underpinned by participatory democracy and governance, and is drawn from a longer work on an ABC of the principles that could be considered when discussing ways to transform VET for South African learners and teachers. The purpose of this article is to scope out the social, cultural, political, economic and environmental context of VET and to suggest some of the possible ingredients to inspire co-created design. Thus the article is just a set of ideas for possible consideration and as such it makes policy suggestions based on many ways of knowing rooted in a respect for self, others (including sentient beings) and the environment on which we depend. The notion of African Renaissance characterises the mission of a VET approach in South Africa that is accountable to this generation of living systems and the next.

**Keywords:** vocational education and training; systemic design; social and environmental justice

## Introduction

This short discussion paper draws on a chapter titled “Policy Design for Vocational Pathways to Protect Biodiversity and Regenerate the Land” which the author wrote for inclusion in a book titled *Mixed Methods and Cross Disciplinary Research* to be published shortly. By valuing certain kinds of knowledge at the expense of others, human beings have created a new age, namely the “Anthropocene,” which is characterised by rapid urbanisation and unsustainable development.



In line with the Paris Declaration (OECD 2005) on participatory development, education policy globally (specifically including South Africa) needs to be framed together with co-researchers who have local lived experience as teachers, trainers and learners. The idea is that those who are affected by a policy decision should be part of the policy-making process. Thus the approach to representation is inclusive and based on testing out ideas.

This article reflects on some of the aspects of an educational programme that responds to the call for an African Renaissance (Mbeki 1999; Sesanti 2016). People in South Africa have lost faith in the state because the elites in the public and private sectors are not accountable to the people they serve. The price of inequality—nationally and globally—has escalated, and the gap between rich and poor is growing.

As far as education is concerned, the challenges are as follows:

- **Design** places of learning to **match the educational content** to the **contextual needs** of a growing population in need of sustainable employment in livable biodiverse environments.
- **Sustain** a system of education to prepare people across their life cycle to **protect diversity** and the land on which we depend.

The scarcity of and competition for university places in metropolitan areas are symptoms of the need to develop more places of learning to foster educational pathways to enable this generation and the next to learn how to protect the environment. This argument is based on the approach that, in order to address “wicked,” convergent problems, we need to address education to address the big issues of the day, namely poverty, climate change and competition for resources.

South Africa faces the challenge of providing employment opportunities to a growing population of young people. A greater emphasis on core principles and engagement with the people in discursive democracy is required to meet this challenge (Mangcu 2016).

In this article, I explain the importance of protecting the environment through small-scale interventions starting at the household and community level and with the support of public education and vocational education and training (VET). Anthropocentrism is the result of planetary scale changes brought about by human intervention. Because of anthropocentrism (a human-centred approach that disregards other living systems), human interventions have brought about planetary scale changes. To make a difference we need to foster everyday living changes that begin with households and communities. The Greek word *oikos*, which is the root for the terms ecology and economy, refers to home or household.<sup>1</sup> By reconnecting with the single root for both economy and

<sup>1</sup> Please see <http://thelateralline.com/tom-jay-ecology-and-economy>.

ecology, we are reminded that the *planet* is our home and that stewardship policies are needed to protect it.

This brief article aims to make suggestions for policy design and praxis to support non-anthropocentric approaches to VET in South Africa. Non-anthropocentric approaches to VET appreciate that human beings are part of “a web of life” (Capra 1996) or a strand that is within a “living system” (Wadsworth 2010) rather than outside or above it.

The notion of living systems is one held by First Nations around the world, for instance, in the words of Hume (2003, 239):

The balance is achieved by each part being aware of the other parts and acting morally toward one another. Bird Rose (1987: 263) explains this as a “reflexive moral relationship of care” between all things, both sentient and non-sentient: humans, animals, sun, earth, wind, rain. In sum, all that is included in this system.

Rose (2011, 4), in her book on the extinction of species, cites the Aboriginal philosopher, poet, leader and singer David Gulpilil and makes the point that in Australian Aboriginal culture, humans, animals, organic and inorganic life are considered to be brothers and sisters as we are all part of one living system. She also explains that consciousness spans many forms of life and that learning to listen to and appreciate other forms of life is vital for developing an ethics of care. In line with this approach, VET needs to focus on the following:

- Encourage problem-based experiential learning to foster young leaders and to enable caring creativity.
- Foster learning from the patterns of history as well as emerging trends. Evaluation based on examinations and journal rankings, whilst important to measure some forms of knowledge, can also act as gatekeepers for neoliberalism and channel out creativity by rewarding people for working in narrowly circumscribed ways.
- Remember the rich heritage of diverse ways of knowing and being and reward it.
- Represent the perceptions of diverse learners as a starting point for the right match between policy approach and context (Hesse-Biber 2010).

In line with the Paris Declaration (OECD 2005), policy in general needs to be reframed together with co-researchers who have local, first-hand lived experience. This approach is based on the principle of subsidiarity that requires that decisions should be made in consultation with the people who will be affected by the decisions (Poe 2010) and that local wisdom should be drawn upon (Wynne 1996). The idea is that those who are

affected by a policy decision should be part of the policy-making process. Thus, the approach to representation is inclusive and based on testing out ideas.

In the case of education policy, teachers, trainers and learners need to be included as key designers to consider what the problem is and what it is represented to be (Bacchi 2010). Stakeholders across the state, market and civil society need to have a say. As such, the notion of Bacchi can be applied to the South African context in that it suggests the need for user-centric policy design that is based on the perceptions of what works, why and how. Outlined is a human development approach to enhance human capabilities (Nussbaum 2011) based on participatory design through fostering support for diverse educational pathways so that the insights and brilliance of people with lived experience can be recognised, appreciated and, where appropriate, rewarded.

Traditional art and culture need to flourish alongside the protection of natural heritage from the invisible micro-world of bacteria to the visible biodiversity that makes South Africa one of the most beautiful places on the planet.

## **Statement of the Policy Context of New VET Pathways**

The article reflects on some of the aspects (e.g. decolonisation, regeneration, redressing inequality) of an educational programme that responds to the call for an African Renaissance (Mbeki 1999; Sesanti 2016). The notion of African Renaissance characterises the mission of a VET approach to focus on accountability to this generation and the next through creating a more equal society, because “a more equal society almost always does better” than less equal societies in terms of a range of indicators of wellbeing (Wilkinson and Pickett 2009).

Decolonisation requires providing many ways to enhance creativity; therefore VET should be practical, based on providing conducive conditions for “being the change” (Neef 1991) in the sense detailed by McIntyre-Mills (2014) in which I suggest an approach to systemic development that honours our place within living systems (Wadsworth 2010). This requires an appreciation that we are human animals who are co-dependent on a shared habitat. I make a case to protect people and the planet through understanding that we *are all living systems*. Stewardship of current and future generations of life can be supported through everyday thinking and practice as ecological citizens (Cao 2015; Hayden 2010) who respect one another as well as other species.

Regeneration refers to an approach that emphasises investing more in restoring, replanting and protecting diverse species. This was emphasised decades ago, for example, by Shiva (1989) and Marcuse (1998) who stressed that sustainability did not go far enough. Unfortunately, sustainable living remains the focus of the UN Development Goals and the UN 2030 agenda.

Regeneration needs to focus on creating opportunities for those denied opportunity in neoliberal economies where the legacy of colonial entitlement lingers, without lapsing into narrow identity politics. The “liberative potential” (Gouldner 1971) needs to be extended so as to develop and protect the web of life of which we are a strand—this is the focus of a non-anthropocentric approach.

With reference to the denial of opportunities, one is reminded of South African learners and members of the wider public in South Africa and beyond who led the #RhodesMustFall (Chaudhuri 2016), #FeesMustFall (Essop 2016) and #FeesWillFall (Satgar 2016) campaigns in order to stress their right to an affordable education. The campaigns need to be understood as an expression of the anger felt by those who consider that the end of apartheid has made little difference to their lives.

Stiglitz (2012) indicates that the price of inequality—nationally and globally—has escalated and that the gap between rich and poor is growing the world over. As pointed out earlier, the way to combat this is to meet the following policy challenges:

**Design** places of learning to **match the educational content** to the **contextual needs** of a growing population in need of sustainable employment in livable biodiverse environments.

**Sustain** a system of education to prepare people across the life cycle to **protect diversity** and the land on which we depend.

However, South African metropolitan areas have a scarcity of places for universities, therefore competition in the market for resources is stiff. This scarcity is a symptom of the need to establish more places of learning and develop more educational pathways to benefit this generation and the next, especially in terms of the protection of the environment. I base my argument on the approach that, in order to address wicked, convergent problems, we need to address education so as to attend to the big issues of the day—poverty, climate change and competition for resources (Ehrlich and Ehrlich 2013; Pearce 2015).

South Africa has the challenge of providing employment opportunities to a growing number of young people. Mangcu (2016) suggests that, to meet this challenge, there must be a greater emphasis on core principles and on engagement with the people in discursive democracy.

Being employed can contribute to both material and non-material aspects of a life worth living (Nussbaum 2011). It can determine wellbeing, but the converse is also true—being unemployed undermines wellbeing. Employment needs to protect social wellbeing through building stocks for the future (Stiglitz, Sen, and Fitoussi 2010) and reframing not only economics but the relationships between people and nature. These authors use a multidimensional measure of wellbeing to indicate that wellbeing spans the following:

1) Material living standards (income, consumption and wealth); 2) Health; 3) Education; 4) Personal activities including work; 5) Political voice and governance; 6) Social connections and relationships; 7) Environment (present and future conditions); 8) Insecurity, of an economy as well as a physical nature. (Stiglitz, Sen, and Fitoussi 2010, 15)

Together, the above aspects comprise so-called wellbeing stocks. Appropriate in this regard was the Thirteenth Nelson Mandela Address delivered by Thomas Piketty (2015)<sup>2</sup> in which he stressed the need to narrow the gap between the haves and the have nots through greater levels of transparency and less opportunity for corruption. In his opinion, the data on money trails and wealth could be managed to ensure fairness and reciprocity, in some instances requiring transfers to restore the balance between haves and have nots.

Although transparency is vital for public trust, a further step is required, namely the need to protect the environment through everyday decisions, as stressed by Maathai (2004) in the Third Nelson Mandela Lecture Address.<sup>3</sup> This step requires addressing resilient urban, rural and regional infrastructure by the following:

- Protecting scarce resources and preparing students in terms of literacy and numeracy;
- Addressing current challenges, namely, the need to feed and clothe a growing (unsustainable) urban population (A new transformational agenda is needed to meet the needs of young people and to prepare them in ways that protect, sustain and regenerate<sup>4</sup> the environment on which they depend through seed protection and replanting indigenous vegetation.);
- Exploring the implications of urbanisation, loss of territory, water insecurity (Waughray 2017), loss of species and the implications for living systems of which we are a strand;
- Focusing on the challenge of creating jobs that protect people and the environment;
- Developing options for responding and adapting to the impacts of environmental change; and

2 The presentation can be accessed at <https://www.youtube.com/watch?v=AmVSDkJ4jYw>.

3 The presentation can be accessed at <https://www.youtube.com/watch?v=AmVSDkJ4jYw>.

4 A regeneration policy to protect people and the planet needs to extend the concept of sustainable living (as per the UN Development Goals—which do not go far enough) to address “regenerative living” (McIntyre-Mills 2017a).

- Contributing to expanding knowledge through studies of human society by exploring culturally diverse ways of caring and stewardship through fostering values that protect biodiversity for social and environmental justice.

Table 1 sums up the need for a new education narrative to address the convergent challenges.

**Table 1:** Values for a new narrative of ecological citizenship to address convergent social, economic and environmental challenges

<p><i>Axiological underpinnings of new narrative</i></p> <ul style="list-style-type: none"> <li>• Decisions need to be made at the lowest level possible in society.</li> <li>• People should be free and diverse in their praxis to the extent that their decisions do not undermine the rights of others (including sentient beings) and the environment.</li> <li>• Happiness is a vital part of educational pathways to promote better economics (Graham 2011)</li> </ul>	<p><i>Convergent social, economic and environmental challenges</i></p> <ul style="list-style-type: none"> <li>• Unemployment and the gap between rich and poor are increasing.</li> <li>• The world’s population is spending more time on line: 1% in 1995; 40% in 2016.<sup>5</sup></li> <li>• Less time is spent interacting face-to-face in real time.</li> <li>• Urbanisation has increased and human beings are becoming detached from nature (Greenfield 2015).</li> <li>• Commodification has increased.</li> <li>• There is a need to transform democracy and governance through increased monitoring from above and below to balance individual and collective interests across the age groups.</li> <li>• Transformation requires public education and engagement in making decisions about options that are shaped by a global covenant (Held 2004) from above, but driven by social movements from below.</li> </ul>
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But the question is how the new narrative can be shared and co-developed in ways that lead to meaningful change. Churchman (1979) talks about the need to consider the so-called “environment of the problem.” By this he means the context of the problem. Unemployment, which is one of the problems to be considered, can be seen as a wicked problem. A wicked, complex problem comprises many interrelated variables that are perceived differently by different stakeholders. Rittel and Webber (1984) shed light on the nature of wicked problems, and Flood and Carson (1993) on the nature of complexity and the extent to which rapid urbanisation accompanied by the digital

5 Estimate for July 1, 2016 at <http://www.internetlivestats.com/internet-users/>.

economy compounds the issue of unemployment for young people and their families who are struggling to adapt to the changes.

According to a United Nations report (2014), 54 per cent of the world population was urban in 2014, and it is projected to be 66 per cent by 2050 if current trends continue. If we consider the life chances and experiences across age groups in South Africa then we are likely to understand that the social determinants of wellbeing will affect the life chances of young people living in increasingly urbanised environments. Balancing individual and collective needs across rural and urban areas will require new approaches to education policy.

Access to rental units, home ownership and stable employment opportunities is shaped by access to appropriate skills. Baby Boomers (born 1946–1964), who experienced living under apartheid and are now grandparents, will have different views from Generation Xers (born 1965–1976) who spent most of their years after apartheid had ended. Some Generation Xers are parents to Generation Y members (born 1977–1995) who will also face a very different set of life chances in a digital, automated economy (Beard 2016). Generation Y faces the risk of becoming increasingly casualised through short-term contracts in neo-liberal work places. Members of Generation Z (born 1996-) will need a new form of education to help them face climate change. The new automated city environments could affect quality of life in ways that are currently unforeseen.

Education policy (with the support of parents and grandparents) needs to meet the complex needs of a growing population of young people to meet these challenges and to re-shape agendas by drawing on local wisdom. A community approach to VET could make a difference as higher levels of participation in employment and VET pathways across the generations could lower the unemployment risks for families and communities. This article advocates a policy and governance approach to public education, community engagement and a range of accessible vocational educational pathways. Educational outcomes need to be underpinned by norms and measured by social, economic and environmental indicators of the perceived wellbeing of participants spanning different age cohorts. Young people need access to health, education and safe housing in order to have the stability they need to learn every day. For this reason, action research is required regarding working with learners to find out the needs across the cohorts and to explore dynamic pathways to enable early identification of needs across the age groups and across different times of the year. For instance, cyclical needs over 12 months tend to vary, and places of learning could identify those who are most vulnerable at significant times of the year (e.g. celebrations and holidays) and provide holiday programmes.

South African universities could position themselves strategically to become universities that foster wellbeing, in the sense that they prepare their students and staff to play an important role in protecting the environment by working with the state and



with industry partners and civil society groups to create jobs that foster development in line with the United Nations development goals.

McKay, Romm, and Kotze (cited in Quan-Baffour and Romm 2015, 459) stress that adult basic education and training is required to support “the basic foundation for lifelong learning and equip them with skills and critical capacity to participate fully in society.”

In many instances, people incur debt, merely to make ends meet in urban and rural environments where earnings do not keep up with rising costs. In South Africa, the issues of both affordable and relevant education are important. The decolonisation of the education curriculum has become the cornerstone of transformation in South Africa, based on a renewed understanding of the importance of Biko’s black consciousness political agenda (Mangcu 2016). Mangcu explains that there is an increasing usage of the discourse of race, rather than the discourse of class that was favoured previously by Mandela, and he is of the opinion that the contribution that can and must be made by black scholars should be recognised. Nevertheless, this is not the same as supporting a racist agenda per se. Instead, it requires a respect for the history of black scholars and black leaders. Mangcu cites Biko’s notion of a “joint culture” for South Africa (Mangcu 2016, 57) and stresses that the “shared ‘text of Blackness’” could be the basis of a conversation between black and white academics about what a new sociology might look like. Whilst Mangcu explores decolonising sociology, his discussion extends to the content of curricula, the nature of democracy and the governance of educational institutions:

Participation is the cardinal principle of democracy—not only because of its intrinsic value, but also because it increases the political efficacy of citizens by giving them direct training in the policies and tools of governance. Almost 200 years ago, John Stuart Mill suggested that this kind of democratic training is best obtainable at the local level where citizens can make decisions about issues they can immediately relate to, and then generalise that knowledge to the broader, national political system (Mangcu 2016, 31).

South Africa has a resurgence of race-based politics featured in the ANC discussions on nominations for future leadership of the ANC. Therefore the need for education and employment for Generation Y members is a priority.

Crenshaw (1991, 299) points out as follows:

Recognising that identity politics takes place at the site where categories intersect thus seems more fruitful than challenging the possibility of talking about categories at all. Through an awareness of intersectionality, we can better acknowledge and ground the differences among us and negotiate the means by which these differences will find expression in constructing group politics.

Thus, the concerns raised by Mangcu (2016) about the focus on class in post-apartheid South Africa could be addressed through more intersectional discourses that take into account the many different life chances that people experience. The socio-demographics (race and culture, including religion, language, gender, age, level of ability), economic aspects (class) and contextual political aspects (citizenship) all have a role in shaping life chances. An intersectional approach addresses structures and social demographics spanning age, gender, sexuality, culture and language. If the roll of the dice determines that one is born in a context that favours or discriminates on the basis of one or many of these variables, then the life chances of individuals will be very different from the life chances of one who is politically privileged in this context. This is why national and international law is needed that protects the capabilities of all and upholds human rights.

### **Promoting Appreciation of the Paradox that Non-anthropocentrism Is Central to Human Security and Wellbeing**

This section discusses a priori norms *to promote and protect African knowledge creation* and a posteriori measures of *educational outcomes*. A priori norms underpin ideals to support social and environmental justice. Africa has a wealth of indigenous knowledge and we need to ensure that it is placed at the heart of the curriculum to remedy the loss of appreciation of the spirit of *Ubuntu* and *Ukama*, notions that refer to the belief that people are people through others and through their connection to the environment (Murove as cited in Romm 2015).

Murove refers to the African concept of Ubuntu (translated as “I am because we are”) and relates this to the Shona concept of Ukama. He explains that Ukama means: being related and interrelated, whereby human wellbeing and the wellbeing of everything that exist are understood in terms of interrelatedness. Relationality is seen as indispensable to the wellbeing of everything (Romm 2015).

Ukama is African non-anthropocentrism. By valuing only certain kinds of knowledge at the expense of others, human beings have created a new age, namely the “Anthropocene,” which is characterised by rapid urbanisation and unsustainable development. Anthropocentrism refers to a human-centred approach that disregards other living systems. The key concepts for a transformative educational approach need to be based on non-anthropocentrism, in other words, the focus must be on ways to protect the habitat of all living systems. The approach takes the next important step in the research agenda, which is to link the notion of relationships across humans, animals and the land as a source of indigenous and non-indigenous wellbeing and the broader societal need for environmental protection and effective ecosystem management of domestic, liminal and so-called wild or natural habitat (Donaldson and Kymlicka 2011).

South African education policy could be informed by Ukama as well as an adapted form of Nussbaum’s (2011, 33–34) and Donaldson’s and Kymlicka’s (2011) normative ideas about capabilities and the right of all sentient beings to a life worth living. Policy also

needs to be informed by a consideration of the implications of these rights for both sustainability and regeneration as suggested by the Intergovernmental Panel on Climate Change (IPCC) formula (2013).

According to Donaldson's and Kymlicka's (2011) normative framework, education policy in general needs to promote ways to protect a habitat for human and animal life where three locations are available:

- **Domestic spaces** where human beings and animal life can co-exist
- **Liminal spaces** where domestic and suburban areas give way to shared spaces that enable life
- **Wild spaces** protected for animals and *their* habitat

A posteriori measures are based on what works, why and how it works, and what the consequences of a particular policy decision would be for people and the environment. Whereas a priori norms provide benchmarks, a posteriori measures ensure accountability based on a broad range of indicators of education effectiveness to enhance educational pathways. For example, policy that is guided by pragmatism and that takes a consequentialist approach based on considering the meanings of the ideas and practices for the majority of stakeholders is an a posteriori approach as it takes into account the points of view of the stakeholders in specific contexts.

Pragmatism can be divided into *narrow pragmatism*, which considers the majority but not all stakeholders, and *expanded pragmatism*, which considers the consequences for all life (McIntyre-Mills 2014, 2017a, b). Narrow pragmatism is based on thinking about the consequences only for ourselves and not others. It leads us to believe that our power and profit must be driven by self-interest and that the bottom line is to ensure our powerful positions and our profits. We tend to think that social and environmental considerations are “externalities” rather than embedded in the current system. Expanded pragmatism is the capability to think in terms of the consequences for self, others (including sentient beings) and future generations of life. It has much in common with idealism in that it considers the consequences for all life. It also has much in common with virtue-based ethics in that it is based on dialogue with those who are to be affected by decisions and it keeps the rights of future generations in mind. It promotes the teaching of ethical thinking by helping people to learn through engaging in practical learning to address everyday challenges. This is action learning, which Denzin and Lincoln (2000, 567) define as a problem-solving technique that “Engages people’s concrete experiences to explore the current situation, clarify the purpose of the organization and remove obstacles to achieve effectiveness and efficiency.”

VET thinking and practice need to be directed at using the curriculum and learning process to achieve the following:

- **Protect** scarce resources, prepare students in terms of literacy and numeracy and address the current challenges, namely the need to feed and clothe a growing (unsustainable) urban population. A new transformational agenda is needed to meet the needs of young people and to prepare them in ways that protect, sustain and regenerate<sup>6</sup> the environment on which they depend through seed protection and replanting indigenous vegetation.
- **Address** the life chances across age cohorts to ensure that people from low- or no-income families are placed uppermost in the policy decisions. Learners could be facilitated to engage in self-reflection to assess what works, why and how, and equally important, what does not work and why. An action-learning approach that supports “planning for country” (Walsh 2002) can be used to explore how to care for the country and to engage with all the stakeholders so that they can decide on areas of concern, frameworks and methods. Social and environmental justice is central to new participatory architectures for democracy and governance (McIntyre-Mills 2014).
- **Enable** learners to understand that living systems are interconnected (Shiva 2011, 2012a, b). Human beings are linked with other animals and the land as a source of wellbeing. This is why Indigenous people say “we *are* the land!” (Yunupingy et al. 1993).

No community can be expected to transform from a high-carbon life style (or to aspire to this life style) without feeling part of the design process and owning the decisions as to how resources should be used. Technology responds to design. “We are the boundaries,” as Haraway (1991, 1992) reminds us. Boundaries can be open or closed, depending on whether inclusion or exclusion is considered to benefit the common good. Inclusive policy decisions (whether to exclude or include) depend on considering the consequences in the short-, medium- and long-term, guided by considering the consequences for people and the planet. Only then can a line be drawn. Taking a policy decision is thus based on an ongoing policy process based on drawing and redrawing boundaries. The challenge is *to balance individual and collective interests*. One of the ways to achieve this balance is to reward people locally in terms of a score card that measures the extent to which so-called wellbeing stocks (Stiglitz, Sen, and Fitoussi 2010) spanning social, economic and environmental indicators based on “being, doing, having, giving and interacting” (Neef 1991) are monitored from above and below (Keane 2009). We need a human security system to identify social, economic and environmental risks through enabling people to participate in using a resilience score card.

6 Regeneration policy to protect people and the planet needs to extend the concept of sustainable living (as per the UN development goals, which do not go far enough) to address “regenerative living” (McIntyre-Mills 2017a).

An early prototype to teach and engage participants in learning about ecological citizenship has been developed and tested (McIntyre-Mills, De Vries, and Binchai 2014).<sup>7</sup> The evaluation of the level of importance of multiple (and simultaneously important issues) is important by reflecting on one’s life in terms of different scenarios and the consequences of these choices, for example:<sup>8</sup>

- *I have* the following things in my life—understanding of human rights, respect for biodiversity, responsibility to care for others.
- *I need* in my life—a home, a sense of safety, a place near public transport and hope for the future.
- *I will add* to my life—more community support from a range of services and/or more community engagement to lobby for resources; more connection to nature.
- *I will discard* from my life—a sense of hopelessness, a sense of entitlement, excessive consumption.
- Self-reflect on *the turning points* for the better or worse—hope that consumption can be replaced with a greater sense of attachment to others and the environment.
- *Consider the barriers* that currently exist and consider what could be done to transform society and our relationship to the environment.

VET needs to address stewardship by enabling people to protect their community. Participants need to consider the following aspects when considering the choices they make in their daily lives: what they perceive they need to **add to** their lives to make a difference to mitigate or adapt to climate change; what they perceive they need to **discard** from their lives to make a difference to mitigating or adapting to climate change; what they perceive are the **turning points** for the better or worse; and what the barriers are and what services make a difference. Telling a story and thinking about “what we have, what we need, and what we are prepared to add or discard from our lives” are steps to help people think conceptually about how to shift their thinking and practice. Mentally we imagine the implications of changing by means of small steps. The exercise is about taking steps into another conceptual space and then documenting the changes we make over time. It is a form of self-contracting. Resources are linked with the steps we take to make small changes. This approach could be relevant for case

7 See the demonstration of the pathways to wellbeing software at [https://archive.org/download/pathway\\_DEMO\\_1/pathway\\_DEMO\\_1.mp4](https://archive.org/download/pathway_DEMO_1/pathway_DEMO_1.mp4) pathways to wellbeing <https://archive.org/details/VN860546> ethics and design

8 These authors have piloted a score card with the aim of making policy recommendations by exploring what works, why and how through the local lived experiences of people who participate. This is an attempt to address the issues (McIntyre-Mills, De Vries, and Binchai 2014). See [https://ia801606.us.archive.org/20/items/pathway\\_DEMO\\_1/pathway\\_DEMO\\_1.mp4](https://ia801606.us.archive.org/20/items/pathway_DEMO_1/pathway_DEMO_1.mp4).

managing VET programmes to meet the needs of individual students. This needs to be a therapeutic process and cannot be rushed. The time taken is part of the emotional connection with a different *way of being*. It involves thinking about being a different person. It is the same kind of process as taking an oath or making a vow (Collins 2005), or entering into a contract to undertake certain actions.

Rorty ([1998] 1999) stresses that leftist political parties need to focus not merely on identity politics (which remain important) but that they also need to create jobs. When employment is no longer what it used to be, new forms of meaningful and valued activity need to be created. This is where the “being, doing, having and interacting score card” linked with local government could be relevant. Vocational education, training and youth leadership could be supported by local government together with NGOs and appropriate businesses. They could play a role in the way I suggest in *Planetary Passport* (McIntyre-Mills 2017a) and in which I build on the notion of identifying with others as a way to protect both people and the planet.

Protecting biodiversity is the focus for a new approach to economics developed by Pauli (2010). He outlines more than a hundred ways to create opportunities through environmental thinking that does not privilege the environment at the expense of people. Instead, his approach is to find ways to enable the unemployed to benefit through working on environmental challenges. His motto is: “There is no unemployment in eco-systems” (Pauli 2016).<sup>9</sup> He stresses the need to provide integrated opportunities through design that taps into the abundant talent and environmental opportunities that can be found and to ensure that the designs protect both people and habitat. This systemic approach could ensure that people come up with solutions that do not create binary oppositions between people and the environment. It is unnecessary to argue that for people to flourish the environment must suffer.

Sustaining the social and environmental fabric of which we are part ought to underpin our policy designs for governance. Participatory action research on democracy and governance to enhance sustainable living and wellbeing are discussed in *Systemic Ethics* (McIntyre-Mills 2014), *Transformation from Wall Street to Wellbeing* (McIntyre-Mills, De Vries, and Binchai 2014) and *Planetary Passport* (McIntyre-Mills 2017a). In these publications I explore and apply the suggestions made by Florini (2003) that the Aarhus Convention (1998) on freedom of environmental information and participation could be usefully extended to support the nexus between sustaining human and environmental wellbeing and resilience.

In South Africa, the elimination of indigenous fauna will limit the opportunity of vegetation to regenerate. This is because herbivores and omnivores fertilise and enrich the earth. South Africa needs to lead the way to make Africa’s young people and their

9 Please see <https://www.speakersassociates.com/speaker/gunter-pauli>.

families aware of this problem through regenerated education. This requires a new narrative based on practical transformation using a tri-sectoral approach (spanning the state, market and civil society) to development for social and environmental justice. The success of the social businesses of Yunus (2017)—who established the Grameen Bank—demonstrates that it is possible to do things differently by introducing rotational funds that are set up by donors who wish to support businesses to end poverty, unemployment and carbon emissions. Pauli (2010, 235–6) stresses that sources of abundance can be found in nature:

Nature does not calculate cash flow.... While we are obsessed with monetarization (to our own benefit), natural systems generate multiple revenue flows best measured in protein, drinking water, energy resources and defense systems. Nature produces benefit through the calculation of integrated benefit flow.

The so-called “cascade economy” conceptualised by Pauli (2010) is based on emulating nature. In the example below, I drew on and adapted the ideas of Pauli (2010) and McDonough (see Szenasy 2017) about better design for living:

Imagine a block of flats that is designed to follow natural flows: rainfall is collected on rooftop gardens; rain tanks channel water for drinking; grey water is used to flush toilets and filtered to be re-used for growing food; gardens are extended to the sides of buildings, on bridges across buildings and in basements; natural materials, such as mud, cow dung, thatch and bamboo, are used for construction; and termite mounds are used as templates to design airflow systems.

The policy approaches and subsequent governance responses that have flowed from this misunderstanding as outlined by Pauli (2010) are characterised as not only an incorrect framing of the issue but also a result of populist policy from both the right and the left of politics. A change in direction is needed. Instead of valuing profit we need to think quite differently in terms of so-called wellbeing stocks (Stiglitz, Sen, and Fitoussi 2010). Pauli (2010, 230–235) explains that natural systems do not work in linear ways. They are cyclical and abhor any forms of waste. Developing the so-called “cascade economy” requires creativity to locate sources of waste, listen to people (Dobson 2012, 2015) and work with them to create sources of abundance. It requires addressing policy to enhance representation, accountability and regeneration through reframing governance to listen and respond to the everyday concerns about poverty and unemployment.

A new policy narrative could help to address these concerns. Instead of channelling all students into universities, more training and apprenticeships, supported by additional colleges and VET training hubs, need to be created across rural, regional and urban areas. Furthermore, learning on the job would enable students to earn a living while they receive training. If the private and NGO sectors were rewarded through general wage and tax incentives for training opportunities provided, then more training options and more creativity could be fostered. Instead of trying to make a failing economy work,

nation states need to draw on the inspiration of Pauli (2010) on cascade economics. He stresses the importance of finding sources that naturally abound in the natural and urban environment and turning them into job opportunities. The rural-urban balance needs to be redressed by recognising its interdependence. Tertiary higher education is a focus of attention in this article, but primary and secondary schools are also in crisis as a result of the number of students who cannot be accommodated by existing education institutions—a situation widely reported in the media in January 2018. Every VET learner could have a wage linked with social and environmental funding supported by the private sector and tax incentives for volunteering their support of and regenerating the community and environmental fabric. The thoughts of Thomas More (1516) on the notion of a universal living wage have been expanded by Bregman (2017), Crace (2017), Haigh (2016) and Henley (2017). All these ideas were put forward by More long ago, but because of an increase in unemployment and casualisation, various forms of social wage are attracting the interest of policy-makers.

A report compiled by the South African Institute of Race Relations (2018, 2) states as follows:

Meeting popular expectations is essentially a challenge of labour market access. If you conduct a polling exercise and ask South Africans what they most want, what is necessary above all else to improve living standards and build thriving communities, the answer, every time, is employment. Many analysts and politicians argue that South Africa has experienced two decades of jobless growth – but this is not true. In fact, since 1994, the number of South Africans with a job has doubled from nearly 8 million to just over 16 million today. The number of black people with jobs has more than doubled. The labour market participation rate (a rate that measures what proportion of people of working age work or look for work) increased by almost 30% for black people. The dependency ratio that measures how many people depend on every 100 who work has fallen from 380 to 251.

However, this report does not take into account the increasing numbers of people who are still unemployed because of the growing numbers of people moving to South Africa and participating in job seeking. According to an opinion piece in the *Mail and Guardian* by Van Wyk (2017):

The unemployment figures put South Africa on a par with countries such as Greece, Senegal, DRC and Lesotho. And unemployment is four or five times greater than in Brics partners Brazil (7.6%), China (4.1%), Russia (5.2%), and India (4.9%). ... Half of unemployed South Africans are between the ages of 15 and 24, and 85.8% of unemployed people are black—a set of facts that puts the #FeesMustFall campaign in perspective.

If we are in any doubt as to whether to design a new approach to VET, consider the opportunity costs of “business as usual” to the social and environmental fabric in South Africa. Instead of valuing profitable VET structures and processes, we need to think in



terms of promoting so-called wellbeing stocks (Stiglitz, Sen, and Fitoussi 2010). Pauli (2010, 236) explains that the costs of the linear economic model involve the costs of inputs, throughputs and outputs, as well as the external costs to society and nature, and this model does not disclose the opportunity costs to future generations of life. The sustainability of a local community is determined by whether a region is sustainable and whether it considers food, energy and water supplies as major determinants for wellbeing. Instead, VET learners could tap into “eco-facturing” in a cascade economy (Pauli 2010) based on finding sources of abundance in nature and creating new possibilities. This could help to redress so-called misdirected systems (Ackoff and Pourdehnad 2001) created by the current economy.

## **Caring for People and the Planet to Address Human Security and “Existential Risk”**

The Intergovernmental Panel on Climate Change (IPCC) formula (2013) shows that the excessive consumption of energy resources affects the size of our carbon footprint. This footprint is defined in terms of:  $E \text{ (Emissions)} = \text{Population} \times \text{Consumption per person} \times \text{Energy Efficiency} \times \text{Energy Emissions}$ . This suggests that the privileged lives of some could lead to “existential risk” (Bostrom 2011, 2013; Meadows and Randers 1992) for all forms of life on the planet. This is evident in the different ways in which human services are provided and the ways in which, for example, water and energy are consumed. A case in point is the Western Cape that is suffering one of the worst droughts in several decades and has moved to level 3 water restrictions as the winter rains were particularly low. At the time the article was written (January 2018), the dams were about 20 per cent full and no rains were expected until June/July 2018. This is the peak tourism season, which adds to the water usage (De Villiers 2017). Fires have accompanied the drought: an average of 99 fires per day raged in the Western Cape during the first half of January, according to a *Cape Argus* reporter (Latief 2016). In a context of increasing anger concerning the lack of equity in social services some have suggested arson, others have suggested the fires could be the result of a combination of factors such as strong, dry winds that ignite unattended paraffin stoves in informal settlements. In the Cape, water insecurity is now a major challenge as dams run dry in May 2018.

In South Africa, droughts, fires and floods impact security and are linked with climate change. All public education on global citizenship ought to support current and future generations’ understanding of the notion of stewardship. A systemic approach is needed to address the IPCC formula that underpins increased consumption in an increasingly urban way of life.

If the narrative is changed to value people and the planet then policy needs to support VET pathways through a range of initiatives from Ubuntu-inspired co-operatives to public-private partnerships in the form of impact bonds to ensure that taxes are used to pay a social wage to all those who do not have a regular form of income. This could

ensure a better quality of life for all South Africans. Those who live sustainably could be rewarded through measuring their low impact and be afforded points on a local government resilience score card that indicates transparently what a low footprint they have and the extent to which they are contributing socially, culturally, economically and environmentally. Bonus points can be awarded in the form of social status advertised in local government honours lists and in the form of a social and environmental wage for those who are actively engaged in protecting their local community and thus contributing to the “one people and one planet philosophy.” Practical, engaged citizenship is the way forward, but it needs to be promoted through immediate feedback to promote realistic rewards.

The re-use and re-assemblage of resources need to be encouraged through VET to enhance the protection of living systems and wellbeing stocks (Stiglitz, Sen, and Fitoussi 2010). Policy needs to stress that economic performance is less important than protecting the fabric of life on which we depend. Nevertheless, Pauli (2010) goes further than Stiglitz, Sen, and Fitoussi (2010) by suggesting that a paradigm shift is required to appreciate how economies can be seen as flows that abhor any form of waste. Unemployment and social and environmental injustices are not externalities in this approach; they pose challenges for policy-makers and academics who need to decide if they are going to be part of the problem or part of the solution. Praxis is not a spectator sport and it needs to avoid being blind to the differing life chances that flow from being male, female, educated, uneducated, black, white, a citizen, a non-citizen, and someone who is able or unable to communicate with powerful decision-makers.

### **The Design of an Inquiring System Based on Critical Questions to Address an Area of Concern**

Design, according to Churchman (1979), needs to ensure that it matches the needs of those who are to use the design. For this to occur, the people who are to be affected by the design, need to have a say in the design process. All forms of communication need to be honoured in a design process. One of the considerations is that digital technology should not be over- or under-used. Matching the right response in context needs to ensure that face-to-face communication and connection with others and the environment are not lost through becoming screen-focused. Greenfield (2015) stresses that face-to-face communication in real time is needed in order to learn to read people’s reactions in real time and to learn how to empathise. Importantly, Greenfield (2015, 21) cites a national trust report on “nature deficit disorder,” a term coined to reflect the lack of contact children have with the natural world. She describes how a ubiquitous screen culture is shaping our lives and reducing contact with others. Previously, the shared television screen did not have quite the same potentially negative impact of isolating people, because people sat around the screen and talked or shared a meal (albeit on trays). Now even that ritual, which in itself limited conversation, has been set aside so that family members can pursue their separate interests on their separate screens. Her research is guided by the following syllogism:

The human brain adapts to the environment and the environment is changing in an unprecedented way, so the brain may also be changing in an unprecedented way. (Greenfield 2015, xiii)

Internet usage has surged and this has the potential to offer new information and to enable people to co-operate and maintain face-to-face connections between meetings. Just as “cells that fire together wire together” (Hebb,<sup>10</sup> cited in Greenfield 2015, 135), people who communicate face-to-face in real time learn to read facial expressions. Connecting with people in real time is a skill that should not be lost in the digital era. Without this face-to-face engagement, we are less likely to bond with one another and to learn to become caring and empathetic. This is the core point made by Greenfield (2015) who, as a neuroscientist, recognises that digital technology has enormous potential, but she cautions policy-makers about its potential risks. The percentage of people in the world who are digitally connected has risen from only one per cent in 1995 to 40 per cent in 2016.<sup>11</sup> In South Africa, the number of people with access to the Internet and learning online can be regarded as positive if this access is used to enable learning to make sense of data and to critically review the material through thinking about the content and the context. However, the divide between those who can afford to have an Internet connection and those who cannot afford it, and between those who can afford broadband and who live in areas that are well serviced by Internet companies and those who are not in the same position, is very wide in many parts of the world.

The reality is that more than half of the South African population have some form of digital connectivity.<sup>12</sup> Moreover, the numbers are growing, which is in line with the international trend. In *Planetary Passport* (McIntyre-Mills 2017a), I stress the need to reward people who do the right thing in terms of their social, economic and environmental choices and not in terms of so-called “Klout” scores (Greenfield 2015, 126), which refer to Internet popularity numbers. The new governance approach detailed in *Planetary Passport* values the contributions that ecological citizens make to protecting “wellbeing stocks” (Stiglitz, Sen and Fitoussi 2010). This can be done by enabling people to reconnect with others in real time and space in safe spaces within local government organisations and approved NGOs.

If young people spend all their time learning and communicating online they will become less skilled in social interaction in real time. The ability to respond appropriately and with empathy is one of the ways in which humanity evolves (De Waal 2009).

10 Please see <http://www.historyofinformation.com/expanded.php?id=4361>.

11 Estimate for July 1, 2016 at <http://www.internetlivestats.com/internet-users/>.

12 In the world the number is 3,424,971,237. See Internet Live Stats ([www.InternetLiveStats.com](http://www.InternetLiveStats.com)). Elaboration of data by International Telecommunication Union (ITU), World Bank, and United Nations Population Division.

Finally, design for decolonisation needs to foster regeneration. Sesanti (2016) stresses that the focus of the process and outcome of redesigning or transforming a university should be on ensuring that all voices (irrespective of gender) can be heard.

Questioning the consequences of our choices for human beings and other living systems is a central concern for policy-makers. When we reconsider the boundaries of what constitutes knowledge, we need to realise that the capability to design responses to areas of concern rests on our ability to ask questions based on considering “if-then scenarios” so that participants think carefully about the consequences of their policy choices when they vote. Representation, accountability and regeneration remain the greatest challenges for democracy and governance. Thomas More, in his book *Utopia* (1516), suggested a universal wage. This idea, suggested many centuries ago, is beginning to find support in Finland and Scotland (Anthony 2017; Bregman 2017; Crace 2017), where it is understood that spending welfare funds in preventative ways makes sense at a time when more and more people are no longer in full-time employment and are unlikely to ever achieve full-time employment as a result of the transformation in the work environment. The notion that people should be paid for volunteering to support people and the planet is no longer farfetched, and it is in line with the spirit of Ubuntu.

## **Conclusion: Transformative Praxis: The Relationship between Emancipation and Life Politics**

The norms that underpin the approach are to foster social, economic and environmental wellbeing through providing opportunities at the local community level. The process of VET needs to be based on *a priori norms* to guide transformation and *a posteriori measures* to support regeneration of living systems. The local engagement process needs to be supported across sectors to ensure that a VET wage can be provided through a mixture of donations and public-private funding supported by transparent governance, tax incentives and representative accounting and accountability. The article briefly summarises some of the literature and suggests adapting Pauli’s (2010) zero-waste approach to VET. It also stresses the need for a sense of ownership of a problem and the way in which it is framed. The critical systemic approach stresses the need for user-centric policy design based on the perceptions of what works, why and how. It outlines a human development approach to enhancing capability based on a multiple mixed methods approach that is non-linear and participatory. Finally, it suggests fostering support for diverse educational pathways so that the insights and brilliance of people with lived experience can be fostered and rewarded. Drawing on Pauli’s (2010) ideas about reusing, repurposing and recycling in order to regenerate living systems and an alternative architecture for governance (McIntyre-Mills 2014, 2017a, b), the article explains the principles of a critical systemic approach to vocational training, an approach that recognises sources of abundance. Issues considered are what the problem is and what it is represented to be. It argues that students led the fees must fall campaigns in order to stress their right to an affordable education and to express the anger of those who consider that the end of apartheid has made little difference in their lives.

The problem is that we need to consider education as part of an open and ongoing process of engaging in protecting the commons (i.e. the shared fabric of life) through appreciation of our interdependency on living systems of which we are a strand. This entails creating jobs that will also provide hope for current and future generations through creating opportunities that regenerate, such as the 101 jobs in a new form of cascade economics suggested by Pauli (2010). This is more than sustainable development through tacking on to the liberal market economy the development of sources of abundance and their fair distribution. Action is needed to address the Earth Charter: Hayden (2010, 368) explains that the charter stresses that “Everyone shares responsibility for the present and future wellbeing of the human family and the larger living world.”

Pauli’s (2010) visionary ideas about 101 ways to create jobs could be extended through VET praxis to enhance representation, accountability and the regeneration of social, economic and environmental resources. A universalist approach to a VET wage should ensure a more equal society and zero waste through upcycling and reassembling resources. Cascade economics, however, need to be reframed to explicitly take into account the needs of marginalised groups without a voice, in particular women, children, asylum seekers and voiceless sentients. Pathways for enhancing VET could include:

- Identifying issues and working with the community (through a dialogical approach)
- Identifying what the diverse personal and community problems are represented to be
- Identifying what and who is currently included and excluded (and why) in policy-planning processes
- Identifying what and who ought to be included (and why) in a better design to address wicked challenges that have many interrelated problems that are perceived differently by different stakeholders
- Identifying/exploring ways to prevent loss of land
- Identifying/locating species that are under threat as a result of habitat loss
- Matching resources to their needs (as located, with attention to a non-anthropocentric ethic)
- Identifying pathways that address complex needs through working with a host of factors simultaneously and in a non-linear manner as detailed by McIntyre-Mills (2010), McIntyre-Mills, De Vries, and Binchai (2014) and McIntyre-Mills, Wirawan, and Indonesian Research Consortium (2017)
- Lobbying to address policy changes

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