The potential of South African curriculum statements to promote more-than-human communal relationships: An ecojustice perspective

by

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DECLARATION

I, the undersigned, declare that this thesis, *Exploring the potential of South African curriculum statements to promote more-than-human communal relationships: An Ecojustice perspective*, submitted in fulfilment of the degree

Doctor of Philosophy in Education

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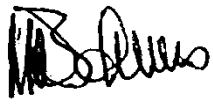

Nastassja von Solms
December 2023

DEDICATION

I dedicate this work to the strong women that have gone before me. Even though you are lost and missed, you will never be forgotten.

Reneé Scholtz (1966-2002)
Olga Coetzee (1944-2021)
Annette Bezuidenhout (1945-2023)

And to my children, Coetzee and Corlia von Solms, who motivate and inspire me every day, without even knowing it. I hope that one day I can be the same inspiration to you. The two of you will always be my greatest achievement. I love you!

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ACRONYMS

CAPS	Curriculum and Assessment Policy Statements
IPCC	Intergovernmental Panel on Climate Change
NCS	National Curriculum Statements
NEMA	National Environmental Management Act
OECD	Organization for Economic Cooperation and Development
SAHRC	South African Human Rights Commission
SASA	South African Schools Act
UN	United Nations
UNEP	United Nation's Environment Programme
UNESCO	United Nations Educational Scientific and Cultural Organisation
WMO	World Meteorological Organization

ABSTRACT

The South African curriculum has undergone several changes since the Apartheid-Era, in an attempt to transform its education system and rid it of the injustices of the past. The curriculum therefore plays a significant role in making sure that learners are empowered with the necessary knowledge and skills to be functioning members of society regarding ecological issues. Curriculum development and implementation can be a long-term solution to address ecological issues. Hence, the implementation of the *National Curriculum Statement,* which comprises of different *Curriculum and Assessment Policy Statements* for the different learning areas of every phase of education.

This study was aimed at exploring the potential of *South African curriculum statements* for promoting more-than-human communal relationships from and ecojustice perspective. The study was therefore aimed specifically at exploring the extent to which the *Curriculum and Assessment Policy Statements* (2014) specifically the *Curriculum and Assessment Policy Statements* for Natural Sciences Grades 7-9, is able to nurture the relationship(s) between humans and the more-than-human world. In order to reach the aim of my study, I made use of a literature review as well as a document analysis and policy analysis. I first unpacked the implications of an anthropocentric worldview for education and the interconnectedness between humans and the more-than-human. The educational implications of a shift from an anthropocentric to an ecocentric worldview for establishing relationships between humans and the more-than-human, was then foregrounded. I further explored the ways in which ecojustice and ecojustice education can be reconceptualised for the nurturing of more-than-human communal relationships. After conducting the literature review, I was able to explore the potential of South African curriculum statements for promoting harmonious more-than-human communal relationships by analysing the *Constitution of the Republic of South Africa* (Act 108 of 1996), the *National Environmental Management* Act (Act 107 of 1998) and the *Curriculum and Assessment Policy Statements* for Natural Sciences (Grades 7-9) (2014). The findings from my document analysis suggested that even though the *Constitution* (1996), provides a legislative framework for the safeguarding of the environment, it is silent on issues relating to environmental remediation. The enactment of the NEMA (1998) provides guidelines for ways in which the environment is managed and for the ways

in which environmental management is implemented in an attempt to promote sustainability. One of the ways in which sustainability can be promoted is through education. By analysing the CAPS (2014), I found that the South African curriculum does promote sustainability and in doing so, it also nurtures the relationship between humans and the more-than-human. This analysis enabled me to comment and make suggestions on the potential of South African curriculum statements for promoting harmonious more-than-human-communal relationships. These suggestions involve the inclusion of teachings on anthropocentrism and African communitarianism in the explicit curriculum.

Key words

Communitarianism, curriculum, ecojustice, education, South Africa

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CHAPTER 1: ORIENTATION

1.1. INTRODUCTION

The aim of this chapter was to introduce my study to the reader by providing an overview of the rational of the study and by presenting the research question and subsidiary questions as well as the research aims and objectives (*cf*. 1.2; 1.3; 1.4). I further presented the theoretical framework and the research design of the study (*cf*. 1.5; 1.6). The research design included the research paradigm, the research methodology and the research methods and was responsible for guiding the study (*cf*. 1.6.1; 1.6.2). These methods included conducting a literature review and document analysis (*cf.* 1.6.3.1; 1.6.3.2). The integrity, demarcation and ethical considerations of the study were also discussed upon which a layout of the thesis was provided (*cf.* 1.7; 1.8; 1.9; 1.10).

Humans and nature continuously influence one another, but the relationship between these two entities is complex and diverse. This is because of the different ways in which individuals and societies think about nature and the extrinsic influences that affect them (Rülke, Rieckmann, Nzau & Teucher, 2020). A belief system, called anthropocentrism, exists amongst some people that consider the natural world to be inferior to human life, and therefore also unworthy of human care (Martusewicz, Edmundson and Lupinacci, 2015). McShane (2007) notes that anthropocentrism considers non-human entities to only be of value if they can serve human interests in a direct or indirect way. The root metaphor of anthropocentrism is therefore the superiority and dominance of humans over all other entities (Martusewicz *et al.,* 2015). Anthropocentrism is consequently considered to be a hierarchical relationship between humans and all other living and non-living things, where humans are at the top of the hierarchy (Martusewicz *et al.,* 2015). This hierarchical relationship has led to an increase in unsustainable resource use and environmental issues such as climate change, deforestation, overfishing and water pollution (Hirschnitz-Garbers, Tan, Gradmann & Srebotnjakm, 2016; IPCC, 2019). Martusewicz *et al.* (2015) ascribe such issues as the consequences of air pollution, the loss of topsoil needed to support the growth of plant life, the killing of animal life and the use of ecosystems as waste sites caused by anthropocentric thinking that treats non-human entities as commodities that are available for human use. These issues are detrimental to

biodiversity, as they impact on all living things and ecosystems that make up the environment (Rülke *et al.,* 2020).

McShane (2007) argues that environmental problems stem from humans being uninformed and short-sighted about their own wellbeing. It is here that education can be used as a tool to help equip humans with the necessary knowledge and skills in the struggle against the destruction and disruption of non-living things (*cf.* Horsthemke, 2019). Quinn, Castera and Clement (2015) agree that education can prevent environmental issues from worsening, but they criticise contemporary school curricula for their role in fortifying anthropocentric people-environment relations. Liu (2008) and Barry (2012) consider environmental education as an important step towards environmental intervention because it encourages individuals to examine environmental issues, participate in problem-solving processes and take action to better the environment. Environmental education is, however, perceived as predominantly anthropocentric, as it centres on humans prioritising human interests over the environment, in other words the privileging of humans over non-humans (Gough, 2018; Bayram, 2016; Rowe, 2016). The need to take more-than-human aspects into account has been emphasised to challenge the anthropocentric nature of environmental education (Kruger, Le Roux & Teise, 2020). Emerging from this challenge is ecojustice education (Kruger *et al.,* 2020; Rülke *et al.* 2020). Arguably, this form of education allows for the investigation of the damaging effects of an anthropocentric worldview on the environment, in other words a worldview driven by the dominant nature of humans over non-humans (Gough, 2018; Lowenstein, Martusewicz & Voelker, 2010). This is because ecojustice education allows humans to think differently about their relationships with each other and their relationship with the natural world (Martusewicz *et al*., 2015). Ecojustice education intends to also restore the relationship between humans and the natural world by eradicating tensions that exists between different cultures and the earth's ecosystems and nurturing the interdependence of humans in terms of other humans, other species, and other ecosystems (Kruger *et al*. 2020). According to Kruger *et al.* (2020: 208), community-based learning is needed to realise the goals of ecojustice education, which works towards "sustainable and democratic communities in which a group of organisms lives in mutual relationships with each other". This comes as community-based learning considers humans to be inseparable from place, because "the places we cohabit and

experience enable us to generate and understanding of our world" (Kruger *et al*., 2020). Gruenewald (2003, 6) insists that community-based learning provides learners with opportunities to engage in "the experience of being human in connection with the others and the world of nature, and the responsibility to conserve and restore our shared environments for future generations". Such experiences will equip learners with the skills needed to sustain communities (Lowenstein *et al*., 2010).

In rethinking the relevance of ecojustice education for the South African school context, we need to draw on African thought that emphasises the acknowledgement of the interrelatedness of all entities in nature (Behrens, 2013). According to Metz (2019), the educational implications of *ubuntu* and African communitarianism must be accounted for in thinking about education towards the nurturing of harmonious more-than-human communal relationships. In drawing on *ubuntu*, ecojustice education is conceptualised as a moral obligation towards fellow human beings and the environment (Chibvondogze, 2016). This obligation is underscored by the aim of African communitarianism, to strengthen the relationship of interdependence between the human, the community, and the more-than-human world (Samuel & Leonard, 2018). Darkoh (2009) notes that from an educational point of view, curriculum development and implementation can be a long-term solution to address ecological issues. Although I agree with Darkoh, I also argues along with Sindima (1990: 137), that ecojustice education should be informed by the African perspective that needs should be met through "cultural development and social justice in an ecologically responsible context". My interest subsequently centres on using an ecojustice education perspective, informed by African thought, to explore the potential of South African curriculum policy statements to promote more-than-human communal relationships.

1.2. RATIONALE OF THE STUDY

The impact of environmental issues on weather conditions have been highlighted in recent years. This can be ascribed to an increase in extreme weather conditions experienced in countries across the world (Fitchett, 2021). Scientific evidence suggests that changes in the earth's climate is mainly due to human actions that dramatically impair ecosystems and human communities (Martusewicz *et al.,* 2015). The accelerated rate at which the temperature on earth is increasing, causes the

atmosphere and oceans to warm (Crist, 2013). According to the Intergovernmental Panel on Climate Change's (IPCC) *Sixth Assessment Report, Climate Change 2021: The Physical Science Basis*, "[e]ach of the last four decades has been successively warmer than any decade that preceded it since 1850" (IPCC, 21: 5). An increase in climate change has exacerbated climate extremes such as heatwaves, heavy rainfall, droughts, and cyclones (IPCC, 2021). This is largely due to the continuous rise in CO2 levels and greenhouse gas emissions which, in turn, have caused average land temperatures to increase between 1.5°C and 2°C. Scientists estimate that average temperatures can increase with 5.7 °C in some parts of the world by the end of the 21st century. The implication of an increase in temperature is that systemic climate changes become more comprehensive, leading to extreme and more frequent heatwaves, drought, rainfall, flooding, and cyclones (IPCC, 2021). In southern Africa, climate change and its consequences have already become apparent, more severe than the global averages suggested by the IPCC (2021) (Fitchett, 2021). This not only relates to restricted adaptive capacity, because of limited capital available for protective measures against climate hazards, but also to the impact it has on society as it threatens food security and increases poverty (Brennen & Quinton, 2020; Fitchett, 2021). Therefore, it is crucial that "we take seriously the interests of future generations of humans and get clear about all of the ways in which the health of the natural environment improves the quality of human lives" (McShane, 2007: 171). A healthy natural environment is based on human actions that are environmentally responsible, and environmental policies that are sustainable (McShane, 2007).

South Africa is a signatory to various environmental treaties. As a signatory to an environmental treaty, the country becomes constitutionally obliged to take binding and non-binding international laws into consideration when it comes to the environment (Kruger, 2019). The *Brundtland Report* of 1987 and the *United Nations' Conference on Sustainable Development* of 1992, impacted on South Africa's agreement to be signatories of international environmental treaties. According to the *Brundtland Report,* the North's unsustainable consumption and production habits together with the South's extreme poverty, are the primary causes of the world's serious environmental problems (Kruger, 2019). These problems called for strategies able to unite development and the environment. The *United Nations' Conference on Sustainable Development* of 1992 emphasised areas relating to hunger and poverty,

economic inequalities and environmental degradation, where international and local efforts needed to be strengthened (Kruger, 2019). From the *Brundtland Report* and *United Nations' Conference on Sustainable Development,* it became clear that worldwide efforts were needed protect the earth's ecological systems.

At the *World Summit on Sustainable Development* held in Johannesburg in 2002, the declaration of a *Decade of Environmental Education for Sustainable Development* (2005-2014) emerged. South Africa is a signatory of this declaration and is therefore obliged to include environmental education in education curricula. This comes as education is believed to be one of the ways in which the environmental crisis can be addressed (Reddy, 2021). As an educator, I was interested in exploring the ways in which the South African school curriculum makes provision for environmental education, and whether it does indeed contribute to environmentally responsible actions. Environmentally responsible actions are reflected by a sustainable environment. It is said that sustainable environments are created when policies and actions are integrated (*cf*. 5.2.2.1). I therefore analysed two documents and one policy that are applicable to the South African context. The analysed documents are the *Constitution of the Republic of South Africa* (Act 108 of 1996) and the *National Environmental Management Act* (Act 107 of 1998).

I also investigated South African curriculum statements, which represent policy statements for learning and teaching in Grades R – 12 in South African schools (RSA DBE, 2012). These statements include *Curriculum and Assessment Policy Statements* (CAPS), *National Policy pertaining to the programme and promotion requirements of the National Curriculum Statements Grades R – 12,* and the *National Protocol for Assessment Grades R – 12* (RSA DBE, 2012). Because I have experience in the field of Biology, I analysed the *Curriculum and Assessment Policy Statements for Natural Sciences Grades* 7 - *9.* Grades 7 to 9 is known as the Senior Phase, which is also the phase in which I currently teach. I therefore had a frame of reference to work from when analysing the *Curriculum and Assessment Policy Statements*.

By referring to the literature review and analysis, I ultimately wanted to determine the potential of South African curriculum statements to nurture harmonious more-than-human communal relationships from an ecojustice perspective. As this study focuses on the South African education context, I also extended my understanding of an

ecojustice perspective to include African perceptions of *ubuntu*, *ukama* and African communitarianism.

1.3. RESEARCH QUESTION AND SUBSIDIARY QUESTIONS

According to the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services' (IPBES) *Global Assessment Report on Biodiversity and Ecosystem Service (2018)*, experts estimate that less than 10% of the earth's land surface will not have been impacted by humans by the year 2050. This can be ascribed to anthropocentric views that have been dominant for decades, and negatively impact on the environment because of the imbalances they cause in nature (*cf*. Hamdani, Edison, Adam, Umar & Barlian, 2021). The consequences of these imbalances are mainly climate change and environmental degradation (Hamdani *et al*., 2021). Anthropocentrism therefore favours meeting the needs of today's generation, regardless of the consequences this has for future generations (Moore, 2017). As humanity now faces an ecological crisis and the various problems associated with it, calls for ecologically based enlightenment are increasing (Barry, 2012). Barry (2012) emphasises the importance of environmental education and education for sustainable development in schools. It is, however, important to note that even though the intention of these two approaches to education are similar, their outcomes are inherently different (Mauricio & Castellanos, 2022). Education for sustainable development is a formal commitment that countries make to ensure that its people are educated on human, social, economic and environmental sustainability. Whereas environmental education focusses on environmental protection (Mauricio & Castellanos, 2022). Although the introduction to environmental education can be perceived as a step in the right direction, notice should be taken of Quinn *et al.'s* (2015) opinion that contemporary school curricula enable unbalanced people-environment relationships due to their anthropocentric tendencies. It is also believed that insufficient environmental content is available in teacher education programmes for teachers to effectively implement environmentally orientated work in the classroom (Reddy, 2017). Kruger *et al.* (2020), however, foregrounded the potential of ecojustice education to investigate the damaging effects of an anthropocentric worldview on the environment. Lowenstein *et al.* (2010) also believe that ecojustice education can serve as a framework for teachers and learners to construct strategies to respond to the social and ecological violence against the more-than-human, and concomitant injustices in

their communities. As community-based learning is crucial for realising the objectives of ecojustice education, the relevance of ecojustice education within the South African context needs to be considered (*cf.* 1.1). Because of its acknowledgement that all things in nature are interdependent, we need to draw on African thought as it impacts on ecojustice education in South Africa (*cf*. 1.1). When looking toward education and its ability to nurture harmonious more-than-human communal relationships, the values of *ubuntu* and African communitarianism are recognised because of the implications these concepts have for education (*cf*. 1.1). South Africa is committed to include environmental education in its education curricula (*cf.* 1.2), but contemporary school curricula is considered to have anthropocentric tendencies (*cf*. Quinn *et al.* 2015). Additional insight regarding the ability of the South African curriculum statements to nurture harmonious more-than-human communal relationships, is needed. It is for this reason that this research project centres on applying an ecojustice perspective, informed by African thought, to explore the potential of South African curriculum policy statements to promote more-than-human communal relationships. The primary research question to drive this study is: How *can an ecojustice education perspective be used to explore the potential of the South African curriculum policy statements to nurture harmonious more-than-human communal relationships?* The following secondary questions will be asked in an attempt to answer the primary research question:

1.3.1. What are the implications of an anthropocentric worldview for education and the interconnectedness between humans and the more-than-human world?

1.3.2. What are the educational implications of a shift from an anthropocentric to an ecocentric worldview for establishing a relationship between humans and the more-than-human world?

1.3.3. How can ecojustice and ecojustice education be reconceptualised for the nurturing of more-than human communal relationships?

1.3.4. What is the potential of South African curriculum policy statements for the promotion of harmonious more-than-human communal relationships?

1.3.5. What comments and suggestions can be made regarding the potential of the South African curriculum policy statements to promote harmonious more-than-human relationships in education?

1.4. RESEARCH AIMS AND OBJECTIVES

In alignment with the research question, this study will aim to use an ecojustice education perspective to explore the potential of South African curriculum policy statements to nurture harmonious more-than-human communal relationships. This aim will be achieved by building the study around the objectives to:

1.4.1 unpack the implications of an anthropocentric worldview for education and the interconnectedness between humans and the more-than-human world;

1.4.2 foreground the educational implications of a shift from an anthropocentric to an ecocentric worldview for establishing relationships between humans and the more-than-human world;

1.4.3 explore ways in which ecojustice and ecojustice education can be reconceptualised for the nurturing of more-than-human communal relationships;

1.4.4 explore the potential of the South African curriculum statements for the promotion of harmonious more-than-human communal relationships; and

1.4.5 comment and make suggestions on the potential of the South African curriculum statements to promote harmonious more-than-human communal relationships.

1.5. THEORETICAL FRAMEWORK

A theoretical framework allows a researcher to report on findings in a way that is analytical, evaluative, and creative. It also constitutes an in-depth understanding when findings are discussed, by framing arguments in consideration of what is normally expected and considered to be true (Kivunja, 2015). A theoretical framework can, however, be influenced by a researcher's preconceived notions on particular topics. These notions, in turn, have the ability to influence the data that is gathered as it lends itself to the subjectivity of the researcher and impacts on the entire study (*cf*. Thiele, 2013).

As this research was conducted from an ecojustice perspective, ecojustice and ecojustice education formed the basis of the theoretical framework of the study. Based on the work of Martusewicz *et al.* (2015), I proceeded from the assumption that ecojustice recognises the significance of biological and cultural diversity, and the importance of decision-making that considers all entities that will be affected by it. The implication of ecojustice is that human communities are interdependent with the larger

ecological systems within which find themselves and is therefore inseparable from social justice issues and ecological prosperity (Kruger *et al.,* 2020). Because of the inseparable connection between social justice and ecological prosperity, an ecojustice perspective centres on two specific goals (Martusewicz & Schnakenberg, 2010). The first goal is to analyse the root metaphors that form prevalent discourses pertaining to social inequality and ecological degradation (Kruger *et al*., 2020). Root metaphors refer to the values that are embedded in cultures and influence cultural insightfulness and human relationships with the environment (Mueller, 2009). Analysing root metaphors therefore involves critically analysing human culture and thought, and the reasons behind human domination and exploitation of all other entities (Turner, 2015). The second goal is to identify, re-evaluate and revitalise existing habitual practises that relate to sustainable living and shared well-being (Lowenstein *et al.,* 2010; Martusewicz & Schnakenberg, 2010). According to Shiva (2016), the concept of sustainability must be eradicated from its anthropocentric tendencies so that it can be cast within an ecojustice framework. Sustainable communities allow natural systems to regenerate themselves (Martusewicz *et al*., 2015). The theoretical framework of this study therefore centres on the perspective that common cultural and environmental needs should be reconstructed so that the responsibilities of "people to nature equal to those of people to people" (*cf.* Thiele, 2013).

1.6. RESEARCH DESIGN

Akhtar (2016) describes research design as a conceptual blueprint within which one's research is conducted. Creswell (2014) goes on to describe research design as a specific set of procedures used to stipulate the ways in which research data is collected and analysed. A good research design is flexible, efficient, and appropriate, and its quality is dependent on the research methodology (Mustafa, 2010; Kothari, 2010). For this research project, research was guided by a qualitative research design. Qualitative research is exploratory, as it aims to explain how and why certain phenomena occur in a specific context. It therefore contributes to an understanding of the world in which we live, as well as the reasons to why things are as they are (Polkinghorne, 2005). This will allow for the exploration of the potential of South African curriculum statements to nurture harmonious communal more-than-human

relationships whilst also contributing to an in-depth understanding of this specific research topic.

1.6.1. RESEARCH PARADIGM

A research paradigm impacts on the way(s) in which knowledge is studied and interpreted, and it stipulates the intent and motivation of the research that is conducted (Mackenzie & Knipe, 2006). According to Lincoln, Lynham and Guba (2011), all research is influenced by philosophical assumptions that shape the way in which a research problem and research questions are formulated, and the way in which information is sought. This study was underpinned by philosophical assumptions derived from the transformative paradigm. Mertens and Wilson (2012: 162) describe the transformative paradigm as having a focus "on issues of power and on addressing inequities in the name of furthering human rights and social justice". The transformative paradigm therefore aims to create an awareness of power issues through research to reduce injustices based on factors such as disability, race, age, ethnicity, sexual orientation, religion, socio-economic status, and gender (Romm, 2014). Drawing from the transformative paradigm added value to my study because it allowed me to uncover the relationship that education fosters between humans and the more-than-human world. The ontological assumption of the transformative paradigm recognises that different versions of reality exist, and that these are socially constructed through various values that may result in structures of oppression (Mertens, 2012). In drawing on this ontological perspective, this study was premised on the assumption that humans and the more-than-human are interconnected. Although dependent on each other for survival, this relationship is often unbalanced because the needs of humans are prioritised above the needs of the more-than-human world due to an anthropocentric focus (*cf*. 1). From an epistemological point of view, the paradigm aimed to understand different versions of reality by understanding historical and social contexts, albeit in relation to power issues (Mertens, 2012). The epistemological assumption on which this study is based, is that knowledge about more-than-human relationships entails the foregrounding of anthropocentric tendencies, which are typically rooted in contemporary school curricula, as having a negative effect on people-environment relationships (Quinn *et al*., 2015) in curriculum documents. Pertaining to this study, the concept of more-than-human relationships and the ability of South African curriculum statements to influence this was

researched. In terms of axiology, the transformative paradigm centres on a respect for "cultural histories and norms in interactions in order to conduct research that has the potential to increase social justice" (Mertens, 2012: 804). This study is premised on the axiological assumption that the interconnectedness of humans and the more-than-human, including the equal importance of both for survival, must be acknowledged and valued. In terms of methodology, the transformative paradigm proceeds from the assumption that research can transform perceptions in an attempt to bring about change (Romm, 2014).

1.6.2. RESEARCH METHODOLOGY

This research is situated in the transformative paradigm (*cf*. 1.6.1), it thus assumes an ontology of historical realism, an axiology that respects social/cultural norms, and a methodology that engages in qualitative data collection (*cf*. Mertens, 2012; Kivunja & Kuyuni, 2017). Research methodology enables the logic use of processes to develop theory from the research that is conducted (Watadza, 2016). It can also be considered as the research approach responsible for understanding various aspects of the specific research methods that are applied in one's study (Tariq & Woodman, 2013). According to Mertens (2012), transformative methodological assumptions not only call on researchers to construct strategies that highlight the different versions of reality that exist, but also for ways in which social change can occur within the different versions of reality that exist. Transformative methodological assumptions are also responsible for determining ways in which research can be more culturally responsive (Mertens, 2012).

With this study, research was conducted by making use of a qualitative research design. This is because qualitative research methods enable researchers to study social and cultural phenomena (Watadza, 2016). A qualitative approach was therefore adopted to foreground the focus of my inquiry and to utilise methods that could enable me to expose anthropocentric tendencies within South African curriculum statements, that might influence more-than-human communal relationships. I was able to analyse and evaluate South African curriculum statements, African communitarianism, and environmental ethics, from an ecojustice perspective.

1.6.3. RESEARCH METHODS

Research methods are considered the tools and techniques used in research, and are influenced by methodology (McGregor & Murnane, 2010). In alignment with a qualitative approach, I conducted a literature review, document analysis and policy analysis to answer the research questions (*cf.* 1.4). As this was a desktop study, data was generated without carrying out any fieldwork. This meant that I made use of data that has been previously collected by others (cf. O'Leary, 2014). I chose this specific method because it allowed me to gather substantial amounts of data in a shorter amount of time. I therefore analysed primary and secondary sources, which allowed me to read, reflect and analyse literature, documents and a policy applicable to my study (*cf.* Watadza, 2016).

1.6.3.1. LITERATURE REVIEW

A literature review is conducted to allow for a better understanding of a specific topic that relates to a study (Arshed & Danson, 2015). In this case, a literature was crucial to better understand the concept of anthropocentrism and how impacts on the environment and education systems, as well as possible alternatives to help minimise its impact.

Anthropocentrism is the perception that humans are more important than all other entities such as mineral resources, animals and plants, and that such entities are only of value if they serve humans in a direct or indirect way (Jakobsen, 2017). Anthropocentrism therefore centres on the ethical belief that only humans have intrinsic value, and that the value of all other entities is determined by the way(s) in which they can serve humans (Goralnik & Nelson, 2012). It is thought that economic development and industrialisation played a pivotal role to solidly establish the Anthropocene, as it allowed (and still allow) humans to influence a variety of natural processes and ultimately the way(s) in which nature works (Reddy, 2021). Human-centredness consequently impacts all living things and ecosystems that constitute the environment (*cf*. Goralnik & Nelson, 2012; Rülke *et al*. 2020). Reddy (2021) states that the negative impact of human-environment interactions has been highlighted since the 1970s, upon which calls for environmental education have increased in an attempt to address environmental problems. This is because education is considered crucial in

assisting humanity in alleviating, and adjusting to, extensive environmental problems. It is also thought to be key in developing living practices that are sustainable (Henderson, Long, Berger, Russel & Drewes, 2017) for all entities on earth. But for the sake of this specific study, it is important to note that environmental education differs from ecojustice education, as an ecojustice approach not only acknowledges environmental injustices (as with environmental education), but also injustices to all life (Martusewicz *et al.* 2015). According to Kruger *et al.* (2020), an ecojustice education perspective recognises that humans and ecological systems are interdependent and considers social justice and ecological well-being to be inseparable. Central to this perspective is the aim to restore cultural and environmental commonalities by renewing the interdependence "of people on people, of people on other species and other species for survival and for the well-being of future generations" (Kruger *et al*., 2021: 208). Ecojustice education can therefore be considered as a teaching and learning approach that aims to understand how social and ecological issues are connected to the ways that people think and act (Martusewicz & Johnson, 2016). Exploring the potential of South African curriculum statements to nurture harmonious more-than-human communal relationships from an ecojustice perspective means that the study focused on the South African education context, and also African perceptions of *ubuntu, ukama* and African communitarianism (*cf*. 1.2). African communitarianism is associated with *ubuntu* and *ukama and* is considered as a social ideology that prioritises the needs of the community over the needs of the individual (Waghid, 2014; Etzioni, 2014). The concept of *ubuntu* constitutes the saying that "a person is a person through other people" (Eze, 2016), and centres on the interconnectedness of humans and the more-than-human world (*cf*. Kruger *et al.,* 2020). *Ubuntu* is therefore considered to have strong ecocentric tendencies, if it is understood as an embodiment of *ukama*, which centres on the interrelationship between humans, their predecessors, the environment and a divine being (Le Grange, 2012). African communitarianism, *ubuntu* and *ukama* are African traditional values which are deeply rooted in African life, form part of moral education, and it is reflected in communal relationships (Giorgetti, 2017; Higgs, 2010; Clark & Mills, 2012). Communal relationships in this context are guided by attentiveness to others' needs and wishes (Clark & Mills, 2012).

1.6.3.2. DOCUMENT AND POLICY ANALYSIS

As this study was a desktop study, data was generated without conducting any fieldwork. I made use document and policy analysis.

Document analyses were used for data generation (*cf*. 1.6.3). According to O'Leary (2014), there are three types of documents that can be analysed. These include public records, personal documents, and physical evidence. For this study, public records such as policy statements, mission statements, annual reports, academic journals and physical evidence such as school manuals were used (*cf*. O'Leary, 2014). Conducting a document analysis allowed me to collect data that aligned with the research objectives (*cf*. 1.4). It did however require me to collect a wide variety of good quality documents before starting with the analysis (*cf*. Bowen, 2009). A qualitative document analysis was then conducted and involved the systematic analysis of the content found in the written documents (Wood, Sebar & Vecchio, 2020). According to Wood *et al.* (2020), qualitative document analysis involves four conjoining processes, which consist of compiling a list of documents related to the research purpose, making use of open coding, which enables broad topics to be identified in the data, followed by theoretical coding. Theoretical coding enabled me to group open codes into themes. A coherent narrative was created to connect the themes that emerged from the data and literature. While a qualitative document analysis is influenced by the philosophical assumptions of a study (Wood *et al.* 2020), the reading and interpretation of the data were premised on the philosophical assumptions pertaining to the transformative paradigm (*cf*. 1.6.1). In addition, I read and interpreted the data through my understanding of an ecojustice education perspective (*cf*. 1.1).

I also made use of a policy analyses to gather data (*cf*. 1.6.3). A policy analysis is a data collection method used to identify the extent to which the policy's objectives have been met. As a result, it fosters an awareness of how and why governments implement specific policies, as well as the implications of those policies (*cf*. 5.3). By making use of a policy analysis, I was able to identify the consequences of various policy options (*cf*. 5.3). It can therefore be said that a policy analysis can be used to express and reflect societal views in contexts where decision-making is done collectively. For my study, I spesifically analysed the *Curriculum and Assessment Policy Statements* (2014) for Natural Sciences for the Senior phase (Grades 7-9). This analysis included

completing a context and content analysis, in which the content of the policy statement was examined (*cf*. 5.3). I then used the information gathered from the context and content analysis, the document analysis and the literature review to identify certain themes from which to explore the ways in which South African curriculum statements could promote more-than-human communal relationships. These themes included human-related relationships in a more-than-human world, sustainable and democratic practices in a more-than-human world and values framed by African communitarianism (*cf*. 5.5).

1.7. INTEGRITY OF THE STUDY

Integrity in research refers to a researcher's professional standards and their adherence to ethical principles throughout the research process (Shaw & Satalkar, 2018). To ensure that I adhered to the principles of intellectual honesty, I had to be accountable for my conduct throughout the course of the study. My ethical values were also reflected in the ways in which I gathered and analysed data (*cf*. 1.6.3).

The theoretical framework set out for the study allowed me to report on findings in a way that was analytical, evaluative, and creative. It also constituted an in-depth understanding when findings were discussed by framing arguments in consideration of what would normally be expected and considered to be true (Kivunja, 2015). Lincoln and Guba (1985) consider good research to be dependent on a theoretical framework that improves the *credibility* and *confirmability* of qualitative data, and that enhances the *transferability* and *dependability* of one's findings. A theoretical framework therefore ensures that the results of a study are trustworthy. Cope (2014) considers trustworthiness to be the truth value and transparency of the researcher's conduct throughout a study. The ways in which the integrity of the findings of this study will be protected, are guided by Lincoln and Guba's (1985) criteria for trustworthiness in research and are indicated in the following exposition. In order for trustworthiness to be promoted, *credibility* needs to be foregrounded. Merriam (2009) describes *credibility* as the degree to which the researcher's findings correspond with reality. *Credibility* therefore represents the amount of truth that is present in a study, and can be determined by the reader through the evidence that is provided by the researcher throughout the study (Polit & Beck, 2014). In this study, *credibility* will be maintained by guidance from professionals such as the study supervisor, as I will frequently provide her with my work. Any feedback and comments I receive, will help me to draw

conclusions *(cf*. Anney, 2014). Another criterion for ensuring trustworthiness in a study is *confirmability*. *Confirmability* is the degree to which the findings of a study are consistent and repeatable over time (Polit & Beck, 2014). According to Bowen (2009), creating an audit trail and keeping a reflective journal will ensure that the findings are consistent and repeatable. An audit trail provides visible evidence of the processes used to reach the objectives of a study (*cf*. 1.4). A reflective journal is a document that allows the researcher to reflect on, interpret and plan ways in which data will be collected, and can include events that happened during the course of the research project (Lindroth, 2014). I will therefore create an audit trail and keep a reflective journal. It is then also important that research findings be transferable. *Transferability* is the degree to which research findings relate to theory, practice, and future research (Denzin & Lincoln, 2011). The *transferability* of a study is facilitated when the researcher can provide a detailed description of the enquiry process (Cohen, Manion & Morrison, 2011). In this study, *transferability* will be secured by providing a detailed description of the research design (*cf*. 1.6). To further strengthen the *credibility* of the study, *dependability* is needed. According to Nowell, Norris, White, and Moules (2017), a study is dependable when the research process is clearly documented and logical. An audit trail will be kept, indicating the ways in which data are collected, recorded, and analysed (*cf*. Bowen, 2009).

1.8. DEMARCATION OF THE STUDY

The demarcation of a study refers to the area of interest that is isolated by the researcher in order for the volumes of available data to become more manageable, and align with the research objectives (Taskoh, 2014). To demarcate this study to Policy Studies in education, I made use of scientific demarcation. Policy can be considered as a course of purposive action that is put in place to deal with specific areas of concern (Dumas & Anderson, 2014). Dumas and Anderson (2014) explain that policies focus on what should be done within an organisation rather than the intention of the policy. Policy can be considered as a practice that unfolds with time. Education policy can therefore also be considered as a plan of action that focuses specifically on actions taken within the education system, and is created by public authorities (Dalton, McKenzie & Kahonde, 2012). Education policies are informed by distinctive values and ideas which are expected to be implemented by education professionals (Rayou & Van Zanten, 2015). Education policy studies can therefore be

regarded as the study of specific education policies within different contexts, and it is key to allow for the understanding and intentions of a particular policy and its implementation (Rayou & Van Zanten, 2015; Taskoh, 2014). In this study I analysed the Curriculum Assessment Policy Statements (CAPS), and therefore this study can be demarcated to Education Policy Studies.

1.9. ETHICAL CONSIDERATIONS

Even though the study is a desktop study that requires no fieldwork (*cf*. 1.6), certain ethical considerations still had to be adhered to. I had to apply for ethical clearance from the University of the Free State's ethics committee before I could conduct the study. Because ethical behaviour is based on conduct that differentiates right from wrong, and behaviours that are acceptable and unacceptable, ethical considerations had to be adhered to throughout the research process (*cf*. Mazur, 2007). These ethical considerations included ensuring that no plagiarism was committed, the acknowledgment of all sources through in-text referencing, and by compiling a comprehensive reference list. I also ensured that no data were falsified or manipulated to suit the objectives of the study.

LAYOUT OF THE THESIS

Chapter 1: Orientation

Chapter 2: Anthropocentrism, consequences, and implications for education

Chapter 3: Ecocentrism, ecojustice and implications ecojustice education

Chapter 4: Recontextualising ecojustice education towards more-than-human communal relationships

Chapter 5: The potential of the Curriculum Assessment Policy Statements for the promotion of harmonious more-than-human communal relationships

Chapter 6: Comments, suggestions, and reflection

1.10. CONCLUSION

As environmental problems increase, so do the urgency of the call for social and behavioural change (Cruz & Manata, 2020) and the role of education for enacting intervention. It is my contention that this study contributes to the debate on the role of education in promoting the interconnection between humans and the more-than-human world. Framing this study in concepts pertaining to traditional African values contributes to the role of research in an African context to the world-wide debate. This

study foregrounds the potential of South African curriculum statements to promote the nurturing of more-than-human communal relationships. Even though environmental issues are highlighted in school curricula, the study also sheds light on anthropocentric tendencies that threaten the relationship between humans and the more-than-human world.

According to the Department of Basic Education (2023), the *National Curriculum Statements* (NCS) is a policy statement for teaching and learning in South African schools. This policy statement consists of *Curriculum and Assessment Policy Statements* (CAPS) for every school subject presented in South Africa and is guided by the *National policy pertaining to the programme and promotion requirements of the National Curriculum Statements Grades R-12*. CAPS is a comprehensive policy document responsible for guiding teaching and assessments. The *National policy pertaining to the programme and promotion requirements of the National Curriculum Statements Grades R-12* is a policy document that outlines the number of subjects that learners have in each grade as well as the prerequisites for promotion. The NCS also includes a policy document that centres on the *National Protocol for Assessments Grades R-12.* This policy document ensures that the processes of recording and reporting are standardised for Grade R to Grade 12 learners (DBE, 2023). Because I, myself, am a teacher who has been predominantly teaching in the Senior Phase (Grades 7-9), I focused my attention on the CAPS documents pertaining to the subject, Natural Sciences, for the Senior Phase (Grades 7-9).

In the next chapter, the researcher reports on a literature review based on anthropocentrism and the implications of an anthropocentric worldview for education, and the interconnectedness between humans and the more-than-human.

CHAPTER 2: THE IMPLICATIONS OF AN ANTHROPOCENTRIC WORLDVIEW FOR EDUCATION AND THE INTERCONNECTEDNESS BETWEEN HUMANS AND THE MORE-THAN-HUMAN WORLD

2.1. INTRODUCTION

The aim of this chapter was to unpack the implications of an anthropocentric worldview for education and the interconnectedness between humans and the more-than-human world (*cf.* 1.4.1). In order to do so, an in-depth analysis of anthropocentrism was done, upon which I reported on the effect that anthropocentrism has on education and the interconnectedness between humans and the more-than-human.

Anthropocentrism is the view that man is the most valuable entity in nature. This idea of superiority allows humans the right to treat the natural world and its resources in ways that they see fit (Gunn, 2011). Based on this view, only humans have intrinsic value, and the exploitation of other entities such as plants, animals and minerals can be justified, if it benefits man (Boslaugh, 2011). Anthropocentrism therefore suggests that the more-than-human world exists primarily because of the value it has for humans. Because anthropocentrism centres on human interest, it is responsible for manifesting specific attitudes, values and practices that relate to the more-than-human world (*cf*. Mylius, 2018).

Specific attitudes, values and practices are also reflected in education and education policies (*cf*. Mylius, 2018). I therefore wanted to explore the South African curriculum policy statements specifically to determine the extent to which these policy statements have the ability to nurture harmonious more-than-human communal relationships. I had to formulate an understanding of what constitutes anthropocentrism, and the interconnectedness between humans and the more-than-human world. The objective of this chapter was subsequently to unpack the implications of an anthropocentric worldview for education and the interconnectedness between humans and the more-than-human world (*cf*. 1.4.1). I drew on a literature review to pursue the objective of this chapter. It was my contention that a conceptualisation of anthropocentrism would be a first step in the understanding of how humans are interconnected with the more

than human world. As such, this chapter also focused on constructing an understanding the consequences of anthropocentrism and its implications for education. Moreover, to explore the impact of an anthropocentric worldview on education, I had to establish the ways in which humans are connected to the more-than-human world, and the interconnectedness between humans and the more-than-human.

2.2.1 ANTHROPOCENTRISM

For many decades, academics have studied anthropocentrism, and it has been defined in a number of ways. The term anthropocentrism stems from the words *anthropos* and *kentro*. *Antropos* refers to human beings and *kentro* means centre (Hayward, 1997). Anthropocentrism therefore hinges on the belief that human beings are the centre of existence on earth (cf. Hayward, 1997).

In 1973, Routley referred to anthropocentrism as “human chauvinism”. Chauvinism is defined as a belief in one’s superiority over others who are considered to be weak, unworthy and/or inferior (Huddy & Del Ponte, 2019). In relation to environmental ethics, human chauvinism refers to humans believing that they are the dominant species on earth, and therefore superior to all other living and non-living entities on the planet (*cf*. Huddy & Del Ponte, 2019). Humans therefore show prejudiced support towards their own kind above all other entities (Routley, 1973). Anthropocentrism is also associated with “human exceptionalism” (Catton Jr & Dunlap, 1978: 42). In this view, humans are different from any other living or non-living entities as they can solve any problems through their own ingenuity and technology (Mylius, 2018). According to Callicott (1984: 299), anthropocentrism “confers intrinsic value on human beings and regards all other things, including other forms of life, as being only instrumentally valuable”. Anthropocentrism is further described as “a concern with human interests to the exclusion of nonhumans” (Hayward, 1997). When human interests are prioritised over the nonhuman, it can be said that anthropocentrism manifests specific human attitudes, values and practices that negatively impact on other species and the environment (Hayward, 2014).

It is often assumed that the environment refers to a place where natural resources and wildlife can be found. But environment is defined as the conditions in which people live (Bolich-Wade, 2022). Anthropocentrism suggests that non-human entities exist only

for the benefit of humans (Evans, 2005). This view is supported by the belief that anthropocentrism is an ethical attitude that only views human interests as important (Minteer, 2009). According to Katz (1997: 122), anthropocentrism places "humanity and human interests at the centre of value". Katz's view of anthropocentrism aligns with that of Boslaugh (2013), who defines anthropocentrism as a "philosophical viewpoint arguing that human beings are the central or most significant entities in the world". Based on the above definitions, it is my contention that anthropocentrism considers humans to be separate from, and superior to, the more-than-human world, which comprises of all other living, non-living and non-human entities that exist on earth. Because of this belief of superiority, anthropocentrism is often associated with egoism (Midon, 2015). Egoism refers to moral decision-making which is completely guided by self-interest (Midon, 2015). Many of the human characteristics found at the fore of egocentrism, such as domination, selfishness, arrogance, carelessness, and denial, are similar to those found in anthropocentrism (*cf*. Midon, 2015). However, psychological traits like these can be cultivated in humans, and it seems to be justified by authors such as Julien (2010), who state that "seeking to satisfy one's own species needs without regard to the fate of other life forms; this is perhaps the normal mode of functioning of any species". Julien (2010) therefore rationalises traits such as selfishness by claiming that all species put their needs before the needs of any other species. But he warns that there are ecological dangers "in the selfishness of a species as dominant as humans" (Julien, 2010: 13). Droz (2022) echoes this sentiment by stating that neither egoism in individuals nor anthropocentrism is a problem, but that it becomes problematic when the practices within society have harmful environmental consequences. Scientific evidence suggests that humanity is overstepping the ecological boundaries regulating the sustainability of species. Changes in the earth's climate is one of the most profound consequences of human activity (Crist, 2013). Increased carbon-intensive living causes the earth's climate to warm up. This implies that that the earth's atmosphere and the oceans are becoming warmer, causing a decrease in snowfall and sea ice. When the amount of sea ice becomes disrupted, so too does the global climate (Rockström, 2009).

It is clear that anthropocentric beliefs have a significant impact on the environment and can take many forms. But one common theme that these definitions share is that each form of anthropocentrism is based on the premise that humans are unique in

relation to all other entities on earth (Rae, 2016). Some believe that humans have this privilege because humans can act in ways in which other entities cannot, and also because of religious beliefs that humans are made in God's image and therefore are more important than any other entities. Consequently, humans should be treated with more dignity than other living or non-living things (Rae, 2016). It can therefore be argued that anthropocentrism is based on the idea of the relationship(s) that exist (and should exist) between humans and the rest of the living and non-living world. Such misconceptions cause imbalances in society, which lead to environmental degradation and violence against the non-human (Rae, 2016). According to Hayward (1997), anthropocentrism constitutes a binary opposition between humans and, for example, the environment. The implication of this is that humans can, and do, take care of the natural environment, if it is to their own benefit or to satisfy their personal needs.

Anthropocentrism can therefore be considered as a barrier to societies that support or uphold it (Washington, Piccolo, Gomez-Baggethun, Kopnina & Alberro, 2021). According to Gribben and Fagan (2016), societies consist of three main spheres, which not only impact on each other, but also on the environment. They are governing bodies, industries, and the general public. A governing body is considered to be a group of people who have the power to administer governance over organisations or political entities. The most formal governing body is usually a government, which is responsible for making binding decisions and creating enforcing laws within a geopolitical system (United States Government Accountability Office, 2009). Industries include economic and manufacturing industries which make up the industrial sector of an economy. Within a society, the general public is responsible for creating the free market, which then in turn influences various industries. Members of the general public elect officials to power. When these citizens are unhappy with decisions made by government, they can influence a government's decisions (Gribben & Fagan, 2016). But governments have the ability to influence members of the public's behaviour by regulating the conduct of its citizens. Companies and businesses that make up the different industries have the ability to influence members of the public through their advertising and the products that they manufacture and sell. Governments are affected by industries because of the political contributions they make, or do not make. But governments and industries have the ability to work together and influence the media, which is able to influence the general public. When

anthropocentrism is present in governing bodies, industries and/or the views of the general public, the direction in which society moves is greatly affected. This is because any environmental legislation could be passed by governing bodies, whether it has a positive or negative impact on the environment. Industries could engage in unsustainable practises without any immediate consequences to their corporations or businesses (*cf.* Gribben & Fagan, 2016). And the general public could manifest irresponsible environmental behaviour. In other words, if anthropocentrism is present in any one of these spheres of society, it can cause a series of serious environmental issues, much like the environmental issues the world is currently experiencing. Since anthropocentrism represents a worldview that does not value, nor respect, the environment as much as it does humans, it is anticipated that environmental issues will continue and intensify (Washington *et al.,* 2021). In order to determine the ways in which anthropocentric thinking can be changed, it is important to understand its history.

2.2.2. AN OVERVIEW OF ANTHROPOCENTRISM

Anthropocentrism has a very complex history and goes back to the beginning of human civilisation, where conquering the wild was considered a common and necessary practice for survival (Acosta & Romeva, 2010).

For as long as humans have existed, so too has the relationship between humans, the earth, and its resources (Liu, 2018). Planet earth is estimated to be 4.5 billion years old, and humans only came into the world approximately 200 million years ago (Liu, 2018). The relationships(s) between humans and nature are based on the interconnection between human society and the natural environment. These relationships consist of complex systems that are dependent on the interaction between human activity and nature. Because the natural environment existed long before humans, it is thought that the natural world can continue to exist without humans, but that humans cannot exist without the natural world (Liu, 2008). Over the last few centuries, human dependence on the natural world has however manifested into a dominance over its resources. This can be ascribed to the anthropocentric "belief that humans alone have moral standing, or else a surpassing degree of it is and has been dominant in history" (Droz, 2022: 30). It is important to note that the

community of people who lead discussions and judge the morality of actions and practices differ across cultures, groups, and times (Grusin, 2015).

Research indicates that Western thinking, specifically, is profoundly anthropocentric. Anthropocentrism is considered to have originated in ancient times and has been shaped by philosophers like Aristotle. It is also upheld by the Christian religion (Custic, 2017). According to Boslaugh (2011) many ethicists argue that the perception that humans are the most important entities in the world, still lie deeply rooted in Western religions and philosophies. This is evident in the book of Genesis in the Christian Bible. Genesis 26:1 reads:

> And God said, [l]et us make man in our image, after our likeness: and let them have dominion over the fish of the sea, and over the fowl of the air, and over the cattle, and over all the earth, and over every creeping thing that creepeth upon the earth.

The argument of ethicists centres on the idea that because human beings have been created in God's image, humans are allowed to exercise control over all other living and non-living entities (Theodore, 2019). And because humans have been created in God's image, they are regarded as the "crown of God's creation" (Hayward, 1997). It can therefore be argued that anthropocentric world views have been cultivated since biblical times and are present in many Western philosophies (*cf*. Hayward, 1997). Anthropocentric views of human relationship(s) with nature, which justify the exploitation and domination of the natural world, are consequently rooted in many philosophical and theological traditions. By implication, these philosophies and traditions are partially responsible for the current environmental issues faced by humanity (Veinovic & Stanisic, 2018).

In order to better understand the part that humans play in environmental issues, one should recognise that different types of anthropocentrism exist (Custic, 2017). Mylius (2018) distinguishes between three types of anthropocentrism, namely perceptual anthropocentrism, descriptive anthropocentrism, and normative anthropocentrism. It is also important to note that some academics, like Mylius (2018), also use the term "paradigm" when discussing the different types of anthropocentrism. Kuhn (1996) defines a paradigm as a well-organised combination of assumptions, methods, evidence, and truths that encourages thought.

Mylius (2018: 12) considers a paradigm to be perceptually anthropocentric when “it is directly or indirectly informed by data received or gathered by the senses of the human body”. In other words, paradigms that are developed by humans are perceptually anthropocentric, because humans depend mostly on sensory data which can, in turn, be used to develop a paradigm. This is because humans perceive, think, and make sense of their surroundings, and the world, from their human perspective (Droz, 2022). Paradigms that are perceptually anthropocentric are also known as epistemological anthropocentrism. Epistemological anthropocentrism is concerned with the ways in which humans value different entities (Dzwonkowska, 2018). According to Minteer (2009: 59) “all values are human values”. This statement by 9(2008) affirms that humans can never perceive the world from another perspective than from a human perspective. This is because the things that humans know of the world, is based on their (human) perspective of the world (Dzwonkowska, 2018). The implication of this line of thought is that all paradigms are then unavoidably anthropocentric, and no human can therefore escape or overcome epistemological anthropocentrism (Parker, 1996). This statement is based on the notion that “the human organism is inevitably the one that discusses value. This is so because the human perspective on value is the only one we know as humans” (Parker, 1996: 33). Epistemological anthropocentrism is not ascribed to humans because they are considered to be the only moral agents on earth, but it is ascribed to humans because of their cognitive abilities. These cognitive abilities are limited, because humans only have the ability to know the world from a human perspective (Dzwonkowska, 2018). By implication, human beings receive and process all information, directly or indirectly, through their senses, and therefore always make sense of the world from a human perspective (*cf.* Mylius, 2018). The problem with anthropocentric thinking is that it instils the perception that all other things (or entities) that are not human, can be treated like objects (Bokedal, Reindal, Rise & Wivestad, 2022). Even though epistemological anthropocentrism is considered to be an inevitable occurrence, humans still have the ability to transcend anthropocentrism and acknowledge the intrinsic value of the natural world (Minteer, 2009). It is also important to note that human perceptions are not only dependent on an individual’s senses, but it is also influenced by geographic, historic, and socio-cultural factors (Droz, 2021). Mahlke (2014) also describes perceptual anthropocentrism as a tool that humans cultivate to help construct and

express daily realities like languages and concepts. Perceptual anthropocentrism therefore pertains specifically to humans. But the structure of perception is not confined to the human race. This comes as various living entities like animals also have the ability to perceive their surroundings and act on these perceptions (*cf*. Wohlleben, 2016).

Another form of anthropocentrism is descriptive anthropocentrism (Mylius, 2018). It is difficult to determine whether descriptive anthropocentrism is avoidable or not (Droz, 2022). A paradigm can be descriptively anthropocentric if it "begins from, revolves around, focuses on, takes as its reference point, is centred around, or is ordered according to the species Homo sapiens" (Mylius, 2018:14). The way(s) in which the world is seen and perceived, centres on humans and their descriptions. It is important to note that this human-centeredness refers to a starting point rather than a moral centeredness (*cf*. Mylius, 2018). Descriptive anthropocentric paradigms are also known to reflect ontological anthropocentric norms. Ontological anthropocentrism is based on the idea of human-centeredness and the assumption that humans are in a more privileged position when compared to other entities. This privilege can be ascribed to the apex position that humans think they hold in creation (Minteer, 2009). This notion stems from ancient times and has been upheld by the Christian religion for thousands of years (*cf*. Boslaugh, 2011). But because scientists and academics have increasingly questioned the idea of human-centeredness, ontological anthropocentrism has been greatly criticised over the last few decades (Dzwonkowska, 2018). This is mainly because of the perception it creates that humans are separate from the natural world (Gunkel, 2012).

A descriptive anthropocentric paradigm also regards humans, and the type of language they use to describe their experiences of the world, as the grounds on which a specific line of thought is based. According to Mylius (2018), five variants of descriptive anthropocentrism exist, namely descriptive anthropocentrism by omission, funnelling, extrapolation, anchoring and separation. Descriptive anthropocentrism by omission refers to humans who intentionally distance themselves from their ecological context. This is when humans deny their relationship with, and interdependence to, the environment (Almiron & Tafalla, 2019). When humans choose not to acknowledge their dependence on the natural environment, anthropocentrism takes place through

a process known as funnelling. Anthropocentrism by funnelling is when "what is considered as existent is understood as dependent upon human perception" (Droz, 2022: 35). Anthropocentrism by funnelling therefore "filters" the world through human perception. The implication of this type of anthropocentrism is that it creates the perception that the only entities that are valuable are those entities that humans perceive to be of value (*cf*. Mylius, 2018). Anthropocentrism by extrapolation is when notice is taken of the more-than-human world, by studying human beings (*cf*. Droz, 2022). This form of descriptive anthropocentrism uses concepts specifically applicable to human beings and then applying these more generally to other entities (Mylius, 2018). Another variant of descriptive anthropocentrism is anthropocentrism by anchoring. This is when human beings are perceived to be the centre of the universe, and because of this, humans hold a core universal position. Humans are, in other words, considered to be the essence of the geographical and the physical world (Mylius, 2018). The last form descriptive anthropocentrism is anthropocentrism by separation. Here the focus is on distinctive human qualities that set humankind apart from all other entities (Mylius, 2018). From this viewpoint, human beings have certain abilities that no other entities have, that separate them from all other entities. Humans are therefore considered to be distinguished from all other entities (*cf.* Droz, 2022). All five variants of descriptive anthropocentrism, anthropocentrism by omission, funnelling, extrapolation, anchoring and separation, are similar in the sense that they justify the disconnect between humans and the more-than-human world.

The last type of anthropocentrism as set by Mylius (2018) is normative anthropocentrism. Normative anthropocentrism is fundamentally based on the rhetoric of value (Mylius, 2018). Some academics refer to this form of anthropocentrism as moral or ethical anthropocentrism (Mahlke, 2014; Dzwonkowska, 2018). This type of anthropocentrism is based on a theoretical perspective that ascribes moral value only to humans. It can be said that ethical anthropocentrism is similar to ontological anthropocentrism, because it reserves moral consideration for humans. It also differs in the way that it defines the idea of "value". It is therefore important to note that value and being valued are not considered to be the same thing when discussing anthropocentrism (Dzwonkowska, 2018). Even though humans are able to appraise the entities on earth, the value of those entities are not determined by humans' recognition or external valuation (Rolston, 1986). This is because the more-than-

human has not been created by humans, it has just been discovered by humans (*cf*. Rolston, 1986). This notion is significant because it affirms that humans can serve as moral agents who are capable of recognising the value of the more-than-human world. In doing so, humans are also able to make decisions on which entities should be included in moral consideration (*cf*. Dzwonkowska, 2018). In normative anthropocentrism, there can also be distinguished between strong and weak anthropocentrism (Mahlke, 2014). Strong anthropocentrism is when the more-than-human is only considered to be of value if it can be of value to humans (Fremaux, 2019). Weak anthropocentrism refers to the need of humans to want to preserve the more-than-human, for the sake of the human (Lenart, 2020). Weak anthropocentrism is also regarded as an ecologically informed concept that acknowledges the role of the natural environment in human well-being (Keulartz, 2012). Qualities of weak anthropocentrism are also reflected in ethical anthropocentrism (Minteer, 2009).

Irrespective of the type of anthropocentric lens through which humans view the world, anthropocentrism is criticised because it is believed to be the driving force behind the current environmental crisis and the poor ecological state of planet earth (Dzwonkowska, 2018). Ecosystems change when deforestation and land degradation occur, when there is a loss in biodiversity, when water and air is polluted and when the climate changes. These changes not only impact on the environment, but they also influence the well-being and health of humans and ultimately threaten life on earth (*cf*. 1.1; Custic, 2017). It is clear that different types of anthropocentrism exist, and that even though they may differ slightly, all types of anthropocentrism have an impact on the environment. This is the reason why anthropocentrism is critiqued in detail in the following section.

2.2.3. CRITIQUE OF ANTHROPOCENTRISM

According to Hayward (1997), anthropocentrism is generally criticised in an ontological or ethical sense. The ontological criticism of anthropocentrism lies in the misconception that man is the most important entity on earth. The idea of human-centeredness causes humans to believe that they hold a more privileged position on earth than any other entity (*cf.* 2.2.2). Anthropocentrism in the ontological sense has been greatly criticised because of the perception of disconnect that it creates between humans and the more-than-human (*cf*. 2.2.2). It can therefore be said that ontological

anthropocentrism is responsible for creating distance and separation between humans and the natural world (*cf.* Gunkel, 2012). Anthropocentrism is also criticised because of the ethical boundaries that it crosses (*cf*. 2.2.2). The ethical criticism of anthropocentrism refers to the mistake that humans make in prioritising human needs and interests over the interests of other living and non-living entities that exist on the planet (Hayward, 1997). Because of the ethical criticism of anthropocentrism, ethical anthropocentrism gained traction during the last part of the 19th century, during the industrial era when humans hoped for better lives in terms of growing economies. The ethical criticism of anthropocentrism therefore refers to the mistake that humans make in prioritising human needs and interests over the interests of other living and non-living entities that exist on the planet (Hayward, 1997). Ethical anthropocentrism gained traction during the last part of the 19th century, during the industrial era when humans hoped for better lives in terms of growing economies. The uncontrolled use of common goods, which included land and natural resources was, however, also met with scepticism (Custic, 2017). This is because humans later started to realise that the overuse of common goods could lead to their depletion, which in turn could threaten human existence. Within environmental ethics, ethical anthropocentrism is considered to be a destructive attitude toward the more-than-human, based on the idea of human supremacy (*cf*. Custic, 2017).

Oakley (2007) further notes that anthropocentrism is associated almost entirely with humans, as all other entities are referred to as “others”. All “others” are considered inferior to humans based on an anthropocentric worldview. Oakley (2007) identifies a specific theme within anthropocentrism which relates to a mental framework and involves specific principles, views, attitudes, and perspectives that consider humans to be superior to all other entities, including all other living species and landscapes (*cf*.2.2). Because an anthropocentric worldview is based on humans having specific principles, views, attitudes, and perspectives toward the more-than-human, it is regarded as “a frame of mind involving humans, and evoked by humans” (Oakley, 2007: 12). The themes found in the definitions of anthropocentrism therefore suggests that anthropocentrism applies to humans, refers to a specific frame of mind, and alludes to the fact that humans are the supreme species on earth.

Martusewicz (2018: 26) further describes anthropocentrism as a belief system where humans consider “the natural world as less important than human life, and thus as

unworthy of our care, or claim it as a commodity or as property to do with as we please". This belief precludes all other species and landscapes from moral standing, which implies that the more-than-human can be reduced to being resources that can be used by humans (*cf.*2.2). Because of this belief system, imbalances between humans and nature are becoming increasingly evident, and can be seen in the environmental issues experienced by countries around the world (*cf.*2.2). It can therefore be said that anthropocentric ethics are based on the notion that only humans have moral value. This implies that even though human beings are said to have a responsibility toward the natural world, they do not have any direct responsibility toward it (*cf*. Jakobsen, 2017; 2.2). In environmental ethics, anthropocentrism is regarded as an ethical framework that ascribes moral value to humans only (DesJardins, 2012). It can therefore be said that anthropocentrism prioritises human experience above the experiences of the non-human (Boddice, 2011). Anthropocentrism has, consequently, led to a hierarchical relationship between humans and other entities, where humans consider themselves and their needs superior above all else (*cf*. 1.1).

Anthropocentrism is associated with centric thinking, which considers hierarchical relationships as natural. Even though violent behaviours are often associated with anthropocentrism, it is still regarded as inevitable and just (Martusewicz *et al*., 2015). Regarding the centric thinking process, Plumwood (2002) emphasises the complex nature of hierarchical belief patterns and the social and ecological oppression it causes. This is because centric thinking centres on creating primary entities that are considered superior to all secondary entities. Secondary entities are then marginalised because of their inferiority to the centre (Plumwood, 2002). As a result, centric thinking creates deeply embedded assumptions which often leads to actions that contribute to the ecological and social crises that communities face (Martusewicz *et al.,* 2015). These assumptions become rooted in culture and become "cultural maps" that are then handed down from one generation to the next. Because assumptions are created and recreated through the words and discourses that people engage in, people start regarding it as the truth, and in turn uses such truths to exploit the natural world. Martusewicz *et al.* (2015) refer to a discourse as complex, intertwined meanings that are created when root metaphors are combined and become dependent on one another. When humans learn to communicate, they use, internalise, and exchange

discourse, and unknowingly participate in creating and reproducing profound rooted communication and belief patterns. When these communication and belief patterns are repeated, it results in practices that are unlikely to be questioned, and which therefore become the norm (Stangor & Walinga, 2014). By implication, discourses use root metaphors to structure specific perceptions of the world. In turn, complex worldviews are created. It is stated by Martusewicz *et al.* (2011) that all culture makes sense of the world around them through a set of specific discourses. This is because language is shaped by commonly shared metaphors and humans use language to think, talk, teach and pray. Anthropocentrism "persists as the moral axis of the West" (Shkliarevsky, 2021). Westernised culture impacts on people all over the world, because it is thought to represent economic prosperity (Morrison, 2018). Because anthropocentrism is ingrained in Westernised culture, it sets the standard for how relationships between humans and the more-than-human should be (Morrison, 2018). This is problematic because modern, Western cultures use hierarchised dualisms to "create important taken-for-granted root metaphors" (Martusewicz and Johnson, 2016: 66). It is therefore my contention that anthropocentrism is based largely on modernist discourse because of the considerable consequences it has had for humans and the ecological systems on which they depend. One of the discourses that is created through the root metaphors of modernity is the idea that humans are at the top of a hierarchy that consists of living and non-living things, making them superior and dominant (Martusewicz *et al.,* 2015). This domination often leads to the exploitation of the natural world, and is not only harmful to the ecological system, but it has also had a negative impact on human communities and their relationship with the more-than-human world (Martusewicz *et al*., 2015). Anthropocentrism has therefore had a detrimental impact on the environment and can cause further irreparable damage to all living and non-living things, as well as ecosystems that make up the environment (*cf.* Rülke *et al.,* 2020).

2.3. IMPLICATIONS OF ANTHROPOCENTRISM ON THE ENVIRONMENT

The negative impact of anthropocentrism on the environment can be ascribed to the damage that humans cause to nature. This damage is a result of the perception that humans are superior to all other living and non-living entities, and the belief that these entities are only of value to humans if they can fulfil the needs of humans (*cf.* 1.6.3.1).

Anthropocentrism removes moral standing from the more-than-human world and views the more-than-human as being merely a resource available to humans to use as they see fit (Washington *et al.,* 2021). It can therefore be argued that anthropocentrism lessens the compassion and empathy humans have for the more-than-human world (*cf.* Muradian & Gomez-Baggethun, 2021). It is because of these kinds of perceptions that Gribben and Fagan (2016) believe that anthropocentrism is responsible for ever-present issues found in society pertaining to the environment. This can be ascribed to the idea that human life is more valuable than any other species or ecosystem(s), which is evident from the harmful interaction(s) between humans and nature.

2.3.1. INDUSTRALISATION

It is believed that people started to take serious note of the environmental problems caused by industrialisation in the 1960s (*cf*. 2.3). More scientific evidence came to the fore and indicated that by harming the environment, people were in effect also harming themselves in the process (Sagoff, 2012). It became evident that society was surpassing the earth's productive capacity as well as its ability to contend with the consequences of human activity and calls for anthropocentric attitudes toward nature to be reconsidered, increased (Veinovic & Stanisic, 2018). This is largely because of the belief that the social, economic, and energy injustices humans are faced with are a consequence of anthropocentric actions, because of the ways in which it causes ecosystems and resources to be exploited (Acosta & Romeva, 2010). By implication, anthropocentrism is deeply rooted in the social, economic, and political structures that promote it, and the impact of human activity, together with the limitations it places on the environment, compromises the survival of humans and all other living species (*cf*. Acosta & Romeva, 2010). It is therefore clear that anthropocentrism can and does create a variety of problems for the very humans that enforce it (and for those who do not). Some of the problems associated with anthropocentrism are the worldview and ethics that accompany it, the psychological aspects associated with, and its ownership and viability (Washington *et al.* 2021). The views and ethics associated with anthropocentrism preclude all other species and landscapes from any moral standing (Washington, 2019). The more-than-human is considered to have no value other than the contribution it can make to humans and their existence. Based on this worldview

and ethics, the more-than-human has no rights, nor does it need to be respected (Vetlesen, 2015). It can therefore be argued that human supremacy has reduced the more-than-human to being just a resource available for humans to use as they see fit. It is also thought that this perception has become the norm in modern industrial society (*cf.* Crist, 2019).

Some academics insist that the psychology of anthropocentrism is very complex as it can involve solitude, paranoia, apprehension, and even aggression (Washington, 2019). This can be ascribed to the solipsistic nature of anthropocentrism, which assumes that the world revolves around humans. Anthropocentrism often distorts the more-than-human into an object of fear and hatred. According to Washington *et al.* (2021: 291), "[i]t is a truism that humans tend to destroy what they fear". As humans, we also tend to deny realities that we do not like. When humans are forced to confront change, or if change is too difficult or dire, we deny that a problem even exists. Because humans cannot always see a solution to a problem, the problem might seem unsolvable. Humans therefore tend not address the root causes of the problems faced by humanity (Washington, 2017). Denial is seen as a "unconscious defence mechanism for coping with guilt, anxiety or other disturbing emotions aroused by reality". Silence is thought to be the most common form of denial, and some issues are just never spoken of. Denial is therefore a strong part of anthropocentrism (Kopnina & Washington, 2020). It does not help humanity in any way to ignore reality. When denying environmental issues, environmental problems will worsen, particularly the problems humans are faced with at a societal level. Problems like conflict, starvation and disease are emphasised by Washington *et al.* (2021), as it can have detrimental effects on societies. Yet, there are still people who deny that environmental issues exist, and who do not recognise the damage that an anthropocentric worldview can cause (Vetlesen, 2015). Anthropocentrism also regards humans as the owners of the more-than-human. It is said that owning land, for example, is historically a Western idea and not an indigenous one (Josephy, 2015). Graham and Maloney (2019) explain that there is a difference in philosophically and ethically considering oneself as landowner as opposed to a custodian of the land. In anthropocentrism, humans hold entitlements to property rights and are therefore generally entitled to do with the environment and its resources, that form part of their property, as they please. By implication, the natural environment and its resources are seen as personal assets

that can be owned, traded, or eradicated. In an ecocentric view, no humans own any land (in the philosophical sense), but the land rather owns itself (Muradian & Gomez-Baggethun, 2021).

The question often arises if anthropocentrism is practical and if it is necessary for sustainable living (Hatfield-Dodds, Schandl, Adams, Baynes, Brinsmead *et al.,* 2015). Some academics who consider themselves pragmatists, argue that it is not necessary for society to change the way it views the world in order to be sustainable. These views indirectly fuel anthropocentrism and are considered to be a part of the reason why society is experiencing environmental issues. But Pragmatists insist that anthropocentric values are sufficient to bring about effective personal and policy changes that can address environmental challenges. Environmental history does, however, not support the sentiment of Pragmatists (Taylor, Chapron, Kopnina, Orlikowska, Gray and Piccolo, 2020). Even though humanity is dependent on the more-than-human for survival, the more-than-human world is not respected nor preserved (Vetlesen, 2015). Environmental history indicates that instead of respecting ecological limits, these limits have been far exceeded over the last few decades, and rather than preserving the more-than-human world, humans mistreat nature and harm biodiversity (Washington, 2019). These factors negatively impact on human interests in the long term because it accelerates environmental issues. This is an indication that anthropocentrism does not respect the more-than-human world, and that it has the ability to cause environmental issues to escalate into environmental crises and catastrophes (Ripple, Wolf, Newsome, Galetti, Alamgir, Crist, Mahmoud, & Laurance, 2017). It is said that every system existing on earth, whether alive or not, has to coexists in an effective manner to prevent catastrophes (Acosta & Romeva, 2010). But, as it stands, the world community is already faced with environmental issues such as increased global temperatures and a depleted ozone layer (Moore, 2017). These environmental issues threaten human existence because of the ways in which it impacts on the condition of the earth and the quality of life of its inhabitants (Moore, 2017). The IPCC (2021: 4) ascribes “[h]uman-induced climate change” to increase weather extremes such as heatwaves, drought, heavy rainfall, and flooding. Furthermore, the IPCC (2021) found evidence of extreme weather events intensifying in every region of the world since the 1950s. One of the concerns highlighted by the IPCC (2021) involves the Atlantic Meridional Overturning Circulation, which is an

integrated component of currents found in the Atlantic Ocean. If extreme weather persists, these currents are expected to change, which, in turn, will cause regional weather patterns to change because the tropical rain belt is expected to then move southward. The implications of this are that parts of the Southern Hemisphere will experience more rainfall, while drier conditions will be experienced on northern continents like Europe (IPCC, 2021). Based on an anthropocentric worldview, humans do not have any moral responsibility to the natural world, and this has caused environmental issues to be increased significantly over the last four decades (*cf*. Jacobsen, 2017; 1.1). Because of anthropocentric perceptions, imbalances between humans and nature are becoming more and more evident, as can be seen in the environmental issues experienced by countries around the world (*cf.*2.2). It can therefore be said that anthropocentric ethics are based on the notion that only humans have moral value.

It is important to note that even though the impact of anthropocentrism is global, it is not equal. This is because the anthropocentric norms of developed countries differ from those of developing nations (*cf*. Sagoff, 2012). According to Bloomfield, McIntosh & Lambin (2020), developing regions, like most countries found in the global South, tend to have higher population densities, which cause land-use patterns to constantly change. This is due to 50% of the world's landmass being transformed from natural habitats to agricultural land (Bloomfield *et al*., 2020). Land is mainly cleared for agriculture, livestock production and mining, which is problematic for the environment as it reduces biodiversity and weakens ecosystems (*cf*. Calma, 2020). Population density, especially in cities, continues to rise, and approximately 55% of the world's population currently live in urban settlements (Ritchie & Roser, 2019). Because of higher population densities and changes in land-use patterns, developing countries are also susceptible to disease outbreaks. Disease outbreaks in vulnerable communities can have catastrophic consequences because of the inability of these communities to deal with the health and economic implications that accompany them (Grace, Lindahl, Wanyoike, Bett, Randolph *et al.,* 2019). It can therefore be said that environmental changes not only affect human health, but also relate closely to economic welfare. Health and economic problems are expected to intensify under anticipated environmental issues such as climate change (*cf.* WHO, 2013). According to the Intergovernmental Panel on Climate Change (IPCC, 2007), increased

atmospheric greenhouse gases drives climate change. Climate change prompts sea levels to rise, storms to become more intense, and heavy rainfall and extreme droughts to occur more frequently (IPCC, 2007). But climate change not only affects the environment, it also causes climate-related hazards which can result in economic hardship, social disruption and even loss of life (Kusangaya, Warburton, Archer-Van Garderen & Jewitt, 2013). According to the World Meteorological Organization (2022), global warming is expected to continue because of the record levels of greenhouse gasses in the atmosphere. Greenhouse gasses mostly consists of carbon dioxide (CO2), nitrous oxide and methane, which are also considered anthropogenic as the warming it causes is associated with human activity (IPCC, 2019). Carbon dioxide levels have increased because it a product of transportation and heating, and cooling systems in buildings, and it is also produced when cement is manufactured. Carbon dioxide is used by plants to help them grow and can reduce levels of this gas in the atmosphere, but the problem is that deforestation has increased, which has led to the excessive loss of vegetation resulting in a reduction of CO2 uptake by plants (IPCC, 2019). The IPCC (2019) further notes that nitrous oxide is emitted in the atmosphere by the burning of fossil fuels. Fossil fuels are generated from hydrocarbon-containing material that formed naturally from the remains of animals and plants in the crust of the earth. This material includes coal, natural gas and crude oil which is then extracted and burned as fuel to power engines or generate electricity (Green & Denniss, 2018). In 2019, 84 % of the world population's primary energy consumption and 64% of its electricity stemmed from fossil fuels and generated 80% of the carbon dioxide emissions found in the atmosphere (Ambrose, 2020). It can therefore be argued that the burning of fossil fuels not only does irreparable damage to the environment, but it is also a direct result from human activity. According to the IPCC (2019), human activity associated with agriculture, natural gas and landfills is also responsible for increased methane levels in the atmosphere. Based on the United Nation's *Environment Programme* (UNEP: 2021), agriculture is the main source of methane, as livestock emissions account for 32% of human-caused methane emissions. According to UNEP (2021), unprecedented demands for animal protein is experienced globally as the population is approaching 10 billion, and it is thought that the growing population, together with economic development and urban migration, will cause methane levels in the atmosphere to continue to rise. Rising methane levels are particularly concerning, as it is 25 times more problematic than carbon dioxide when

it comes to warming the atmosphere (UNEP, 2021). According to the IPCC (2019), the gases that make up greenhouse gases have increased significantly over time, especially in the industrial era.

Gas emissions and average global temperatures have increased by 1.1°C in 2021, compared to pre-industrial (1850-1900) temperatures, making it the 7th consecutive year that global temperatures have been over 1°C above what it was during pre-industrial times. According to the European Union's Copernicus Climate Change Service (2021), the five hottest years in history have been experienced since 2015. In 2020, increased average temperatures not only led to all-time high temperature being recorded in areas from the Antarctic to the Arctic, but it also caused record storms to be generated in the Atlantic Ocean. It also caused a record number of fires to wreak havoc in the United States, Australia, and Siberia in 2020 *(cf.* Ambrose, 2020). The WMO (2022) found that parts of Canada reached temperatures as high as 50°C, which compares to temperatures found in the Sahara Desert in Algeria. Excessive rainfall occurred in Asia and Europe, which lead to deadly flooding, and that severe droughts were experienced in parts of Africa and South America in 2021. The WMO (2022) ascribes an increase in the strength and frequency of such extreme weather conditions to human activity.

Due to its little adaptive capacity and vulnerability, the African continent is particularly vulnerable to climate changes (*cf*. Ambrose, 2020). The IPCC (2007) considers the southern African region to be the most vulnerable on the continent. According to the WMO (2022), southern Africa has been experiencing severe heatwaves, droughts, and changes in the timing of phenological events. Kusangaya *et al.* (2013) consider the impact of climate change on water resources to be detrimental to the socio-economic and biophysical environments, because of its ability to cause direct and/or indirect damage in agriculture, health, ecosystems, biodiversity, and energy generation sectors. The quality and quantity of water resources are mainly influenced by temperature and rainfall (Kusangaya *et al*., 2013). Regarding temperature, Kruger and Sekele (2012) found that there was a warming trend in South Africa because of the rise in minimum temperatures. They also found that warm extremes increased, while cold extremes decreased, which further confirms a warming trend. According to Kusangaya *et al.* (2013), scientific evidence suggests that southern Africa is set for extremely wet periods and more intense droughts because of inter-annual variability.

This not only refers to the volume, but also to the expected changes in intensity and frequency of rainfall and droughts. Changes in weather patterns result in more extreme weather events and longer periods between rainfalls, which affect livelihoods (Kusangaya *et al.,* 2013). It is therefore evident that the environment is changing, and I agree with the view of Jones, Mansell and Moylan (2020: 2) that "[h]umans have always shaped and been shaped by their environment". This statement confirms that the human-centred ideology of anthropocentrism drives environmental change, and that anthropocentric norms are responsible for the degradation of the environment (*cf*. Jones *et al.,* 2020).

2.3.2. CAPITALISM

Capitalism is considered to be one of the key factors behind anthropocentric thinking and environmental degradation (Gribben & Fagan, 2016). Capitalism is "an economic system characterized by private or corporate ownership of capital goods, by investments that are determined by private decision, and by prices, production, and the distribution of goods that are determined mainly by competition in a free market" (Merriam-Webster, 2023). Capitalism therefore revolves around making money. In trade, the largest profit often involves foregoing sustainability. This is because in order for companies to increase their profit they need to increase their production, which often means using more environmental resources. Restoring the environment after making use of its resources costs money and reduces company profit. Companies often forego the environmental restoration process, and in effect also forego sustainability (Gribben & Fagan, 2016). Capitalism therefore impacts on the environment. In this regard, many economists are in agreement that even though the capitalist system is imperfect, it is successful when compared to other economic systems such as communism in countries like the Soviet Union in the 20th century (Adelman, 2014). But even though the exploitation of the natural environment is justified in terms of its benefit to humans under anthropocentric norms, there are strategies that can be implemented to help prevent environmental issues from worsening (*cf.* 1.1). One of the strategies considered crucial for environmental intervention includes education, and is discussed in the section below (*cf.* 1.1).

2.4. AN ANTHROPOCENTRIC WORLDVIEW ON EDUCATION

The ways in which the relationships between humans and the environment are understood, greatly affect people's worldviews (Rehman-Sutter, 2000). Because people's relationship(s) with nature differ, so too will their worldviews. This is significant because worldviews therefore also influence the ways in which people perceive environmental problems (Rehman-Sutter, 2000). Two main worldviews exist on human relationships with the environment, namely anthropocentrism and ecocentrism (Almeida, 2007). With regard to the relationship between humans and other entities, an anthropocentric worldview grants humans dominance over these entities. Within an ecosystem, humans then assume the superior position of an alimentary chain (Esteves, 1998). In contrast, ecocentrism is aimed at the ecosystem itself, where humans are considered to be one of the elements of the bionic community. Here a respect for all elements within those communities are fostered (Almeida, 2007). It is important to note that a worldview is not necessarily how reality is, but rather a way in which one can view and interpret reality. Worldviews are therefore determined by one's mental constructs, and this is because mental constructs are responsible for forming one's observations, perceptions and interpretation of reality (Shkliarevsky, 2021).

Worldviews on education differ from country to country, and so too will the human-environment relationships that exist within those societies. This is because "diverse cultures across the world live within very different cosmologies that have very different effects on the natural world" (Martusewicz & Schnakenberg, 2010: 28). It can be said that different worldviews produce different relationships to the world (Kruger *et al*., 2020). Because a worldview has the ability to influence the relationship(s) that humans have with the world, it is important to distinguish between different anthropocentric approaches. The first anthropocentric worldview on education that will be discussed, is based on a traditional anthropocentric approach to education. A traditional anthropocentric worldview is one that is hierarchical in nature (Custic, 2017). This means that humans consider themselves the most dominant species on earth, which constitutes a superiority over all other entities that exists (Custic, 2017). Because anthropocentrism is thought to have been in existence since ancient times (*cf.* 2.2.2), it can be said that the idea of human superiority over the natural environment has shaped anthropocentric world views (Hourdequin, 2015). Traditional anthropocentric

worldviews were strengthened during the scientific revolution as well as the industrial revolution because of the need to increase production and to develop economies. Since this time, nature has increasingly been treated as a lifeless machine that can be used to satisfy human needs. As a consequence, the environment has rarely been subjected to ethical concern (Kortetmäki, 2013). Because of the unlimited access humans had to natural resources, environmental protection and restoration efforts had to increase. In actuality, the motivation behind the efforts to protect and/or restore natural resources is so that humans will be able to benefit from, and enjoy, it (*cf.* Kortetmäki, 2013). Efforts to protect and restore the earth's resources can therefore be knowingly or unknowingly driven by anthropocentrism. A traditional anthropocentric worldview is therefore regarded as a general worldview that is disconnected from environmental concerns (*cf*. Hourdequin, 2015). Some academics like Kopnina (2012) insist that environmental degradation is a direct result of anthropocentrism, and therefore also wrong because of its inability to lead humans to a sustainable future. Anthropocentrism is also considered to be one of the key factors driving "ecocide" (Shkliarevsky, 2021). Ecocide is when a range of acts cause severe destruction to the natural environment. These acts can be performed either intentionally or unintentionally (Eichler, 2020). Other academics regard the view of ecocentrist authors like Kopnina's view on anthropocentrism, to be too harsh and suggest that a more moderate approach toward anthropocentrism be taken (Shkliarevsky, 2021). A moderate anthropocentric worldview proposes that a more tolerant anthropocentric approach be taken when considering environmental problems. A moderate anthropocentric worldview is based on the notion that anthropocentrism can be used to benefit humans and other living, non-living and non-human entities (*cf.* Shkliarevsky, 2021).

Worldviews are influenced by geography and culture, which also impact on the type of educational content found in a curriculum. The issues that governments consider important to address are then reflected in their education systems (Gruenewald, 2003). This can include ecological issues such as climate change (*cf*. 3.2). If ecological issues are not addressed, it will not only impact on the ecology, but it will also have a negative impact on the most vulnerable communities (Kruger *et al.,* 2020). Some of the most vulnerable communities are found in Africa (Vogel & Scholes, 2015). This is particularly relevant because global warming will cause average temperatures in sub-

Saharan African countries to rise more than the expected mean global temperatures. This, by implication, means that the most vulnerable communities of southern Africa will be greatly affected by ecological changes (IPCC, 2021).

The effects of the current ecological issues facing the world, are significant as they impact on more than just the environment. When ecological issues are experienced, they influence multiple areas of human life on earth. It is said that ecological issues have the potential to influence the economic, social, cultural, and political aspects of human existence (Hume & Barry, 2015).

Based on the view of Hume and Barry (2015), the economic, social, cultural and political problems experienced by humanity, stem from the ecological crisis facing the world and is exacerbated by human actions.

Due to an increased scarcity of natural resources, the global economy is thought to be on the verge of a resource disaster (Nicolaisen, Dean & Hoeller, 1991). Ecological issues such as the degeneration of the atmosphere, soil, groundwater and the oceans, are particularly important when it comes to the economy (*cf*. 2.2.1). External environmental costs are a significant contributor to environmental degradation. This is because access to environmental resources lead economic agents to believe that such resources are common property, available to use as they see fit. The problem is that these agents are often unable to recognise the true cost of environmental degradation. As resources become depleted, the cost of such resources increases over time (Nicolaisen *et al.,* 1991). By implication, economies are affected by the availability of environmental resources, and the scarcer these resources become, the more expensive they will become. This makes environmental resources increasingly inaccessible, especially to the poor, and can compromise human survival (*cf*. Nicolaisen *et al*., 1991). Not only does the ecological crisis impact on the economy, but it also influences the social, cultural and political spheres of life (O'Brien & Sygna, 2013). The political climate comprises of political, social and cultural systems. Within these systems, politics and power are responsible for establishing rules and regulations in terms of the use of environmental resources. Such rules and regulations allow for problems regarding the more-than-human, to be identified and addressed. Solutions to these problems are often dependent on the worldviews of those who hold

positions of authority, and are based on the relationship that exists between those individuals and the more-than-human (*cf.* Forsyth, 2003).

A prerequisite for addressing these problems, is knowledge of the global dilemma faced by humanity (Hume & Barry, 2015). A new, ecologically-based enlightenment is needed that is orientated around the needs of the planet and its inhabitants (Barry, 2012). As education is able to provide humans with the knowledge needed to address the various ecological issues facing the world, it plays a crucial part in understanding the needs of the planet, and those dependent on it (*cf.* Barry, 2012).

Due to the fact that we live in an age where the earth's resources are being depleted at an alarming rate, there is a need to teach mankind that "protecting a tree is no different from protecting a forest" (Yakar, 2018: 95). This is an ecological ideology that suggests that ecological values can be taught through education (*cf*. Yakar, 2018). Education has the ability to impact on one's perspectives, actions and relationships. Education therefore plays an important role in shaping the societal members it produces (Houser, 2014)

Even though every country in the world has an education system, there are significant differences between these systems. It is said that the education systems of countries found in the East have been pursuing more modern education methods in an attempt to contend with the development of economies. The education systems of countries in the West are associated with high quality education, developed over time, as many of these countries underwent industrialisation and democratisation processes (Chen, Li, Wang, Xiong & Zhang, 2022). The differences between international education systems are determined by government funding, the value that nations place on education, the amount of time that is dedicated to education, the ways in which education is distributed within a country, as well as the content that is taught (Gross-Loh, 2014). Generally, education is thought to be a purposeful activity that is directed at achieving specific goals, such as cultivating skills and character traits. This is done through the transmission of knowledge (Chazan, 2022). Because of its ability to instil social change and economic development, education can be used as a policy instrument that can help communities to thrive. Education can therefore be of great value, especially in developing countries (*cf*. Chazan, 2022). It is important that social change and economic development be promoted in developing countries, especially

when having to deal with environmental issues like climate change, for example. Climate change has various social, economic and environmental ramifications, which are unevenly dispersed across generational, geographical and social boundaries. As a consequence, the ways in which such ramifications are dealt with, will differ from developed countries to developing countries. Because of a lack of resources, developing countries will find it difficult to adapt to changes in environmental conditions (Wijaya, 2014). This is because of the limited capacity of developing countries to deal with the effects of environmental changes (*cf*. 2.3). In order for the communities in developing countries to adapt to changing environmental conditions and thrive, intervention is needed (*cf*. Wijaya, 2014). Environmental intervention is possible through education, and it has also become critical to educate future generations in ways to embrace environmental change (Chimombo, 2005).

In 2015, the 2030 Agenda for Sustainable Development was adopted by the United Nations. Here, environmental, social, and economic concerns were raised, and a set of Sustainable Development Goals (also referred to as Global Goals) was developed in an attempt to promote "peace and prosperity for people and the planet now and into the future" (UN, 2023). One of these goals is quality education. According to the United Nations (2023), quality education is globally recognised as a crucial component for breaking the cycle of poverty, and this is especially true for developing countries. This is because education helps individuals to develop social, emotional, cognitive and communication skills from a young age, who will then have the ability to positively impact their communities (*cf.* UN, 2023). Adding sustainable development to international and national school curricula is one of the suggested strategies to help improve human-environment relationships (Seikkula-Leino, Jonsdottir, Hakonsson-Lindqvist, Westerberg & Eriksson-Bergström, 2021). Calls for change in contemporary school curricula have increased over the last few decades because of the role it plays in embedding anthropocentrism as the dominant paradigm for the relationship(s) that exists between humans and the environment. This causes imbalances within human-environment relationships, which are exacerbated because of the loss of humans' connection with nature (Quinn *et al*., 2015). It can therefore be said that even though sustainable development is suggested for improving human-nature relationships, these outcomes can be hindered by curriculum policies and activities (Quinn *et al*., 2015). According to UNESCO (2021), data from 100 countries indicate that only 53%

of national education curricula pertains to environmental content. It also indicates that when school curricula do make provision for environmental content, it is given low priority. It was further found that less than 40% of teachers were confident in teaching learners on environmental issues. Of that 40%, only one third was able to effectively explain the effects of climate change, for example (UNESCO, 2021).

In a country like South Africa, the present curriculum (Curriculum Assessment Policy Statements) makes provision for the integration of environmental education with other subjects. Environmental education content and themes are, in other words, integrated into the content of traditional subjects such as Languages and Mathematics. However, there are no policy guidelines that specify the ways in which such integration should take place. It has been found that a lack in policy guidelines, together with contextual factors like time constraints, result in teachers focusing only on teaching the core content of their subjects, and avoid teaching additional environmental content (Damoah & Adu, 2019). It can therefore be said that the absence of policies on environmental content in school curricula, hinder the development of relationships between humans and the more-than-human.

However, there are some academics that argue that this absence of environmental content can be beneficial to mankind. Such arguments centre specifically on the notion of sustainability (Hamdani *et al*., 2021). This is because sustainability is regarded as one of the root causes of environmental problems, as it values the world and its resources in terms of the value it has to humans. Many modern human cultures share these views. The problem is that anthropocentric worldviews not only contribute to environmental issues experienced on a local scale, but it also has an impact on the global environment (Hamdani *et al.,* 2021). According to Hamdani *et al*. (2021), the global issues caused by anthropocentrism include global warming, the depletion of the ozone layer, the greenhouse effect and deforestation. Damage to the environment directly relates to human activity because it prioritises human needs over what is best for the environment (Hamdani *et al*., 2021). It is for this reason that calls for a bridge between anthropocentrism and ecocentrism have increased over the last few decades (Rülke *et al.,* 2020).

Anthropocentrism differs from ecocentrism in that anthropocentrism reflects a moral obligation only to humans, whereas ecocentrism considers all living and non-living

entities equally important. Both anthropocentrism and ecocentrism influence people's perception of nature and its protection, and in effect also has an effect on nature-related attitudes (Rülke *et al.,* 2020). The relationship(s) that humans have with nature is usually reflected in education systems, and as these relationships change, so too should the content change that is taught within an education system (*cf.* Veinovic & Stanisic, 2018). Education plays a major role in the relationship between humans and nature, as it is responsible for a specific knowledge and value system that humans adopt, as well as the skills and habits that they develop. The knowledge and value systems of humans, together with their skills and habits, are responsible for the cognitive capacity and worldview that they adopt. This worldview then prepares them for life and work within a specific community and profession (Trnavac, 2014). Because education equips the youth to be members of a society, teachers have the task of preparing learners for active civic participation within society. This is not only good for society, but it will also promote the health of the planet (Houser, 2014). A key function of education is therefore not only to prepare the youth to be a part of society, but it is also considered a fundamental way in which positive human-environment relationships can be established from an early age (Houser, Krutka, Province, Coerver & Pennington, 2013; Horsthemke, 2019). Education has the ability to influence human perspectives, actions and relationships, which can lead to increased environmental awareness and changes in teacher and learner attitudes (Horsthemke *et al*., 2019). Education socialises members of a group, and transmits that society's norms and values to its members. The quality of socialisation is therefore dependent on the habits and aims of the group (Houser *et al.* 2013). This notion was particularly important for this study, as it links to the current aims found in school curricula. Education is implemented through educational content. Educational content involves the "appropriate selection of content out of the entire, science-based human knowledge and generational experience" which is then transferred to learners in various ways and through different curricula (Vilotijević, 2014: 497).

Schools are responsible for providing its learners with equal educational opportunities, with the goal of bringing about intellectual development. This is usually done by implementing a curriculum (*cf*. 2.4). A curriculum is defined by Burton (1998: 4-5) as "an organized framework that delineates the content that children are to learn, the processes through which children achieve the identified curricular goals, what

teachers do to help children achieve these goals, and the context in which teaching and learning occur". A curriculum therefore determines the content that is used for teaching and learning, the processes that are used for learners to interact with that content, the actions that teachers take to guide learning, and what the contexts will be in which teaching and learning takes place. A curriculum is also considered a planned sequence of instruction that incorporates the intentional interaction of learners with educational content. Within a curriculum, educational objectives are set, and processes for assessing whether those objectives were attained, are put in place (Kelly, 2009). According to Oakley (2007), different types of curricula exist within educational contexts. The different types of curricula are defined as the explicit curriculum, the implicit curriculum, the hidden curriculum and the excluded curriculum.

The explicit curriculum refers to the subjects that are taught. It reflects the mission of the school as well as the kind of knowledge and skills that learners are expected to acquire during their time at school (Kelly, 2009). The explicit curriculum is also known as the overt curriculum and is considered to be the official curriculum that guides instruction in schools (Mitchell, 2016). An explicit curriculum consists of written understandings and directions that are carefully designed by the relevant authorities (Wilson, 2015). Once it has been designed, it is usually pilot tested by teachers and learners. Only after it has been pilot tested by teachers and learners, is it then published (Burton, 1998). Some might argue that an explicit curriculum is a system of control that limits creative thinking for teachers and learners, and dictates the kind of content that is taught and the educational activities that must be done (*cf*. Burton, 1998). However, it is important to acknowledge that teachers have the ability, even if it is limited, to contribute to the curriculum in various ways. Because teachers perceive and enact the curriculum, they are also capable of resisting certain outcomes or rejecting concepts that do not align with environmental sustainability (Quinn *et al.,* 2015). Morelli (2011: 6) defines environmental sustainability as

> meeting the resource and service needs of current and future generations without compromising the health of the ecosystems that provide them, and more specifically, as a condition of balance, resilience, and interconnectedness that allows human society to satisfy its needs while neither exceeding the capacity of its supporting ecosystems to continue to

> regenerate the services necessary to meet those needs nor by our actions diminishing biological diversity.

But in order for teachers to do so, they must be able to contemplate the allegiances they have to specific environmental philosophies and ethics. They also have to evaluate how these allegiances pertain to the curriculum, and the ways in which these can impact on their educational practices. It is also important that teachers are able to evaluate the ideological assumptions that are immersed in education policies (*cf.* Quinn *et al.,* 2015). During these processes, not only will the worldview that is reflected within the curriculum become clearer, but so too will teachers' views toward the environment (c*f.* Quinn *et al.,* 2015). It can further be said that individual concepts and attitudes facilitate human behaviour and the extent to which sustainability is enacted by teachers. The conceptions and attitudes of teachers will, in other words, intentionally influence the ways in which human connections with nature are expressed in education (Evans, Whitehouse & Hickey, 2012). The explicit curriculum therefore pertains to knowledge that is intentionally transferred to learners, and contains learning activities that reflect such knowledge. Whether the worldview of an education system or its educators is ecocentric or anthropocentric, will impact on the explicit curriculum and its implementation (*cf.* Evans *et al.,* 2012).

In education, there is also an implicit curriculum (Kelly, 2009). While the explicit curriculum is intentional, the implicit curriculum refers to teaching and learning that occurs unintentionally. The implicit curriculum is therefore also referred to as the unintended curriculum. An implicit curriculum is a curriculum that is created via the thought processes of teachers. It is neither written, nor published. This kind of curriculum often arises from the culture of a school, and is based on the behaviours, attitudes and expectations of parents, learners and teachers (Kelly, 2009). One critique of the implicit curriculum is that that it is an ever-changing system of random ideas and activities that teachers and learners engage in, if and when they want to (Burton, 1998).

The hidden curriculum refers to lessons that are taught unintentionally. It is, in other words, not the educational content, but rather the norms, values and beliefs that are transferred to the learner(s) in the classroom (*cf*. Cornbleth, 1984). The hidden curriculum is also described as an "implicit curriculum that expresses and represents

attitudes, knowledge, and behaviour, which are conveyed or communicated without aware intent; it is conveyed indirectly by words and actions that are parts of the life of everyone in a society" (Alsubaie, 2015: 125). It can be said that the hidden curriculum has the ability to influence learner perceptions and attitudes.

Even though any learning experience can include unintended lessons, the hidden curriculum differs in that it refers to the norms, values and beliefs that is acquired specifically in primary and secondary school settings (*cf*. Cornbleth, 1984). Some of the school-specific aspects of the hidden curriculum that have the ability to influence learning are teachers' exercise of authority, teachers' use of language, the relationships that exist between teachers and learners, learning activities, and disciplinary measures. It is because these aspects differ from school to school that the hidden curricula will also differ (*cf*. Kaggelaris & Koutsioumari, 2015). When it comes to the social and moral lessons that are expressed through the hidden curriculum, teachers also have a crucial role to play. This is because teachers' moral characteristics and ideologies are, often unintentionally, translated into their lessons (Alsubaie, 2015). The interaction between teachers and learners can therefore promote moral and social ideals. Because the hidden curriculum often teaches lessons that pertain to social awareness, it is unlikely that young children or learners who experience social barriers to learning, will be able to understand the hidden curriculum without it being explained to them (Kaggelaris & Koutsioumari, 2015). This is because young children and learners who experience barriers to learning, do not always have the ability to understand things that they are not explicitly told. In a hidden curriculum, a teacher has the ability to convey information through their tone of voice and facial expression(s), but learners who are very young and those who have learning barriers will struggle to understand the teacher's use of non-verbal communication (*cf*. Alsubaie, 2015).

The excluded curriculum is also referred to as the null curriculum. The excluded curriculum pertains to content or skills that are deliberately omitted from instruction (Cahapay, 2021). This happens when teachers consider certain ideas or topics to be unimportant, upon which these are then ignored and not dealt with. By implication, the excluded curriculum is that which is not taught (*cf*. Cahapay, 2021). Even though environmental education is considered as an important component of the school curriculum of South Africa, it is not a subject that is taught independently from other

subjects, but rather as an element that can be integrated into other subjects. This is problematic, as curriculum implementation in South African schools tends to focus on subject specific content rather than the integration of environmental education in those subjects. As a result, the implementation of environmental education is marginalised in many South African classrooms (Damoah & Adu, 2019). Due to the exclusion of environmental knowledge from the curriculum, it can be said that environmental education is part of the excluded curriculum.

Most countries around the world have an explicit national sciences curriculum for primary and secondary education (Adams & Adams, 2003). This is also true for South Africa. In South Africa, public schools are guided by the *National Curriculum Statements* (NCS) that ascribe different *Curriculum and Policy Assessment Statements* (CAPS) to different subjects and phases in which those subjects are taught (DBE, 2023). In chapter 5 of this study, I analysed a part of the *Curriculum and Policy Assessment Statements* pertaining to the subject Natural Sciences, for the Senior phase (Grades 7-9).

For the aim of this study, the difference between an explicit curriculum and a 'hidden curriculum' is important. The explicit curriculum refers to the curriculum that is taught in the classroom, whereas the hidden curriculum relates to all knowledge that a learner gains without prescribed learning. It is believed that greater learning takes place through the hidden curriculum because it teaches socially appropriate attitudes, perspectives, and beliefs (Kincheloe, 2005). According to Kincheloe (2005), both these forms of curricula have power over learners, because it guides them as to what is considered valid or invalid knowledge, and in effect also determines what is worthy or unworthy of study. Since governments and teachers are responsible for determining which content is prescribed and taught in school curricula, education is considered to be a political institution which is bound to politics and power (Oakley, 2007). Oakley (2007) also argues that power not only relates to the influence that education has over people, but also by what it can prevent. It can therefore be argued that education is affected by power because others control what and how, learners learn. It also determines the conditions they should meet to advance through in the schooling system. This implies that a political climate is created in education by constructing the boundaries of what is legitimate thought (Oakley, 2007). Here it is important to take note of omissions and commissions which are found in school curricula. Omissions

refer to the information that is not found in the official curriculum, which then contributes to commissions to the social order (Kelly, 2009).

Although it is possible to address civic issues, like the continued climatic and ecological crisis through social studies, truly understanding issues of public concern and developing resolutions for those issues, calls for multidisciplinary education (*cf*. Houser, 2014). This is however not always possible, as education systems are constantly faced with the challenge of outdated content in the curriculum. This can be ascribed to the dynamic character of science and technology, together with changes in lifestyle (Veinovic & Stanisic, 2018). However, the size and complexity of educational systems make it difficult to constantly follow and adapt to social changes (*cf.* Veinovic & Stanisic, 2018). According to Veinovic and Stanisic (2018), anthropocentrism was prevalent in school curricula in many developed countries in the West in the 1950's and 1960s at the height of the industrial era. When considering the use of science, technology and human labour, nature, for example, was presented only as a resource that could be exploited to further technology and achieve higher levels of production. This came as improved technology and production was presented as a solution to better living conditions (Vilotijević, 2014). The implication of such teachings was that an illusion was perpetuated that humans are the masters of nature and can use its resources indefinitely (*cf*. Vilotijević, 2014).

Anthropocentrism is regarded as a perspective that is rooted in social discourses. Its influence on education is inevitable and it is therefore my contention that the omission of anthropocentric thought constitutes a commission to maintain the anthropocentric status quo in school curricula. It is important to note that this not only impacts on the education systems of countries in the West, but it also influences education systems of African countries. This is because the "Western style of education has been entrenched in our African constitutions, styles of dispensing justice and politics" (Sibani, 2018: 63). It is for this reason that school curricula are so sharply criticised by academics like Quinn *et al.* (2015), who argue that contemporary school curricula strengthen anthropocentric people-environment relationships (*cf.* 1.1). Liu (2008) and Barry (2012) consider environmental education to have an important role in environmental intervention, because of its ability to encourage participation and action in problem-solving processes that relate to bettering the environment (*cf.* 1.1). Even though environmental education differs from contemporary school curricula, it is still

thought to be reflective of anthropocentric norms. This is because environmental education is based on environmental ethics, which is concerned with the preservation of the natural world to ensure the survival of mankind (*cf.* Gough, 2018; Bayram, 2016; Rowe, 2016). It can therefore be argued that environmental ethics centres on protecting the natural world, because of the importance it holds for mankind.

It is based on these notions that it can be said that ethics play an important role in education. This is because it has the ability to affects the ways in which humans view, and treat, the more-than-human. It can therefore also be said that our views on environmental issues are shaped by our moral principles. And because of this, education pertaining to environmental education must foreground ethics (Atabey & Topcu, 2020). Different theories of environmental ethics exist and can be differentiated based on their ethical reasoning patterns. The ethical approaches found in environmental ethics are biocentric, anthropocentric or ecocentric in nature (Esmaeilpour & Bahmiary, 2017). In a biocentric ethical approach, humans and other living entities have intrinsic value. From this perspective, humans extend value to other living entities that are not human. An anthropocentric ethical approach is when the environment is only considered to be valuable because of the benefit it has for man and for future generations. The ecocentric ethical approach acknowledges that humans form part of the environment and it therefore places emphasis on the implementation of ecological laws (Kortenkamp & Moore, 2001). Environmental ethics can be described as “efforts to articulate, systematize, and defend systems of value guiding human treatment of and behaviour in the natural world” (Eser, 2016: 597). Environmental ethics is responsible for highlighting environmental issues and challenging the principles on which it centres. The primary goal of environmental ethics is to clarify and develop ethical relationships between humans and the natural environment (Randall, 2013). This is because environmental ethics does not consider the more-than-human to be less important than humans, even though society centres predominantly on the needs of humans, it also acknowledges the rights of the more-than-human in its moral values. This comes as plants and animals are also considered to have a right to exist (Muralikrishna & Manickam, 2017). However, the nature of the ethical relationships between humans and the environment that guides human behaviour and the ways in which the more-than-human world is grappled with, is determined by the type of environmental ethics that societies choose to apply. In the

opinion of Pavlović (2013: 31), a balance between an anthropocentric and ecocentric approach to education is needed, because “environmental ethics, valid for all living and inanimate entities, does not exclude the need for some elements of anthropocentric ethics”. In other words, anthropocentric ethics and environmental ethics both have a part to play in education. This is because education has the ability to bring together the concept of democracy and ecology, found in anthropocentric and environmental ethics. These concepts are based on the principles that humans have the freedom to be a part of society and also to grow an awareness of the interconnectedness that exists between all living entities (Peters, 2017). The fact that these interrelationships exist, implies that moral consideration cannot only be limited to mankind, but that it should also apply to the more-than-human world (Kruger *et al.,* 2020).

2.5. THE IMPLICATIONS OF ANTHROPOCENTRIC AND ECOCENTRIC WORLDVIEWS FOR EDUCATION

Not only is the world experiencing an ecological crisis, but it also experiencing a cultural crisis. This cultural crisis is precipitated by the ways in which humans have learned to think and act towards larger life systems and each other (Washington *et al.,* 2018). From an anthropocentric point of view, ecology, humanity, nature and people seem to be entities that are completely unrelated. But from an ecojustice perspective, humans and nature constantly influence one another and are interdependent (Kruger *et. al*., 2020). As a result of the influence of humans on nature, and vice versa, complex interrelationships between these entities exist, and are influenced by the ways in which humans perceive nature, the external factors that influence human perspectives on nature, and the ways in which humans respond to the external influences of these perspectives (Rülke *et al*., 2020).

2.5.1. THE WAYS IN WHICH HUMANS PERCEIVE THE MORE-THAN-HUMAN

In 1996 David Abram deliberately used the term “more-than-human” to challenge the language people use to describe entities that are not human. The word “more” refers to quantity and therefore the amount of living and non-living species, other than the human species, that exist (Martusewicz *et al*. 2015). According to Behrens (2013: 66) “all living things such as families, species and ecosystems, as well as inanimate

natural objects such as rivers and mountains" form part of the interconnected web of life. Humans and the entities that form part of the more-than-human world can co-exist when there is mutual respect and co-operation between natural things (Behrens, 2013). The relationship between humans and nature determines the nature of the ways in which interaction between the two-take place. Even though humans and nature are regarded as separate entities, a harmonious balance and coexistence is possible when humans realise their interrelatedness to nature (Kruger *et al*. 2020). It is for this reason that humans and nature can be considered to be interrelated beings (Eze, 2017). Within the Western philosophical context, the position of humans in relation to the more-than-human is conceptualised in four different ways (Eze, 2017). The first position suggests that "only humans hold moral rights, and the non-human is valued insofar as it could be used to benefit humans" (Kruger *et al.,* 2020: 210). By implication, non-human entities like plants and animals can be appropriated and exploited by humans for human benefit (Eze, 2017). A second position proposes that all biological entities have intrinsic value, because every biological entity is responsible for "pursuing its own good in its own unique way" (Taylor, 1986: 45). Leopold expands on Taylor's (1986) statement that all biological entities have intrinsic value, to argue a third position that not only ascribes intrinsic value to biological entities but also to all other non-living entities. Leopold (2020) therefore argues that ethics should also pertain to soil, water, plants and animals, which is also known as an ecocentric position (Kruger *et al.,* 2020). Eze (2017) argues that the animal rights theory can be regarded to be the fourth position that determines the relationship between humans and the more-than-human. The animal rights theory is based on the premise that moral value be ascribed to all sentient entities (Eze, 2017). Based on the different ways in which Western philosophy view the relationship between humans and the more-than-human, it is clear that not only humans hold moral value, but that other entities like biological entities, non-living entities as well as sentient entities also hold moral value. It is therefore my contention that the more-than-human world refers to all other living, non-living and non-human entities that exist on earth. Even though the different entities have different functions on earth, they are all regarded as interrelated beings that interact with, and depend on, each other. This interaction and interdependence of the different entities indicate that they are all interrelated and inseparable (*cf*. Kruger *et al.,* 2020). Environmental studies acknowledge that the key element in efforts to intercept environmental issues, is humanity. This comes as mankind is considered to

be the primary creators of environmental problems. It can therefore be said that the safeguarding and improvement of environmental conditions should start with people, and that people should be educated on matters that pertain to the causes of, and solutions to, environmental issues (Atabey & Topcu, 2020).

2.5.2. EXTERNAL FACTORS THAT INFLUENCE HUMAN PERSPECTIVES ON THE MORE-THAN-HUMAN

In order to rethink the relationships that exist between humans and the more-than-human, anthropocentric thinking must be challenged (Yan, Litts & Na, 2020). One of the ways in which this can be done, is to educate individuals in a way that promotes an ecocentric attitude, rather than an anthropocentric attitude (Goldman, Assaraf & Shaharabani, 2013). Researchers have proven that behaviour towards environmental issues are affected by environmental attitudes (Esmaeilpour & Bahmiary, 2017). It has been found that a positive attitude towards the environment leads to making environmentally friendly decisions (Polonsky, Vocino, Grau, Garma & Ferdo, 2012). By implication, environmentally friendly behaviour relates closely to ecocentrism and not to anthropocentrism. This is because individuals with anthropocentric attitudes toward the environment are more rationalistic in their reasoning, whereas those with ecocentric attitudes are more emotional in their reasoning. Those who portray ecocentric attitudes believe that "other living things are valuable and have the same right to live as humans, the well-being of other creatures is as important as the well-being of humans" (Atabey & Topcu, 2020: 92). It is therefore my contention that in order to address environmental issues, ecocentric attitudes should be encouraged. Ecocentric attitudes are reflected in ecological, biological and environmental literacy. *The Education Sector* of UNESCO (2023) defines literacy as "a continuum of learning in enabling individuals to achieve their goals, to develop their knowledge and potential, and to participate fully in their community and wider society". Ecological literacy refers to the ability of humans to understand the natural systems that permit life on earth. This involves the understanding of ecosystems as well as the ability of ecosystems to create a sustainable human society. It further combines the science of systems with ecology, which allow learning processes to nurture a profound appreciation for nature (Capra, 2009). This is because it creates a basis for an integrated approach to environmental learning, which then in turn allows for environmental issues to be addressed (*cf*. Capra, 2009). According to Önel and Durdukoca (2019), to be

biologically literate not only means to have knowledge of biological concepts and their historical development, but it also involves the analysis of the human impact on the biosphere and the effect of biological diversity and biotechnology on civilisation. Biological literacy is therefore based on an understanding of the general principles of biology and the ways in which it is, and can be, implemented in one's personal and social life. Environmental literacy refers to an understanding of how local communities and the earth as a whole are affected by the ways in which humans use the earth's resources. This involves instruction that teaches learners that humans and ecosystems are interdependent, and how the choices that humans make regarding their consumption of the earth's resources, alter sustainability (Howard, 2012). Education is considered to be pivotal in improving learners' abilities to solve environmental problems and change people's views on sustainable development (Chen & Bu, 2019). Educational institutions are one of the main societal actors that have the ability to contribute to organising and forming relationships between humans and other entities (Pedersen, 2019). This is because an educational system "occupies a particular space as norm-(re)producer and legitimizer" (Pedersen, 2019: 2). One can therefore assume that educational institutions like schools have great power not only in terms of educating learners on the more-than-human world, but also on the positive and negative impact that human relationships can have on the more-than-human. Education is therefore the primary terrain from which human-environment relationships can be reconstructed. In reality, however, little evidence exists of changes in learner attitudes and behaviour, despite an increase in factual and cognitive awareness (*cf*. Horsthemke, 2019).

2.5.3. THE WAYS IN WHICH HUMANS RESPOND TO EXTERNAL INFLUENCES OF HUMAN PERSPECTIVES ON NATURE

Academics like Kilinc, Yesiltas, Kartal, Demiral and Eroglu (2013) call for educational intervention because of the biodiversity loss caused by anthropocentrism. The danger of biodiversity loss not only lies in the effect that it has on the more-than-human, but also on the impact it has on human existence (*cf.* Kilinic *et al.,* 2013). Changes in the ways in which humans behave towards the more-than-human could occur if the risks associated with anthropocentrism are personally perceived, causing an increase in the urge to act toward removing such risks. This can be done through education (Dervişoğlu, 2007). Behavioural changes can occur when the aesthetic, utilitarian and

intergenerational aspects of anthropocentrism are recognised and dealt with in education. This is because these aspects of anthropocentrism are value-based and able to drive conceptual change (Kilinic *et al.,* 2013). Aesthetic anthropocentrism stems from the view that an appreciation for the beauty of nature leads us, as humans, to falsely deem entities that are beautiful as being sentient. Based on this notion, entities that are considered to be beautiful are of intrinsic value to humans, making them anthropocentric in nature (Doran, 2022). It can therefore be said that aesthetic anthropocentrism is the notion that nature is valuable, because humans view it as a source of artistic pleasure and enjoyment (*cf*. Kilinic *et al*., 2013). Utilitarianism is the belief that actions are just, if those actions are beneficial to the majority. Utilitarianism encourages actions specifically aimed at optimising happiness and well-being (*cf.* Eggleston, 2017). The idea of utilitarianism is, in other words, to utilise opportunities that relate to one's well-being. The founder of utilitarianism, Jeremy Bentham, defined utility as "[t]hat property in any object, whereby it tends to produce benefit, advantage, pleasure, good, or happiness…[or] to prevent the happening of mischief, pain, evil, or unhappiness to the party whose interest is considered" (Broome, 1991). Bentham's definition of utility emphasises the satisfaction of human needs, and in doing so, it also affirms the anthropocentric tendencies of utilitarianism. Intergenerational equity is a principle that suggests that the present generation has an obligation towards future generations in terms of not leaving the earth in a worse condition than they found it (Thladi, 2002). This principle is largely based on development – development that will not only sustain the present generations, but also development that is able to anticipate the needs of future generations. This includes the development of economies and infrastructure (Thladi, 2002). The problem is that most developmental activities directly or indirectly impact on the earth's natural resources at a greater rate than these resources are able to renew themselves. If humanity continues with this trend, future generations will have to survive with less and less of these life-sustaining resources (Thladi, 2002). Intergenerational equity is therefore considered to be anthropocentric in nature, because it appears to cause destruction to parts of the environment that is not thought to be of value to humans (Thladi, 2002). Stakeholders responsible for designing and implementing school curricula should be mindful of the ways in which concepts like aesthetic anthropocentrism, utilitarianism and intergenerational equity are portrayed in education. This comes as anthropocentric attributes have the ability to influence educational interventions intended to build

relationships between humans and other entities (*cf.* Kilinic *et al.,* 2013). Learners might not always be aware of the interconnections that exist between humans and all other living, non-living and non-human entities. In order to avoid overlooking the interconnectedness that exists between humans and the more-than-human, Kilinic *et al.* (2013) suggest that the value of other entities should be taught in contexts that promote a harmonious existence.

Researchers also suggest that developing non-anthropocentric perspectives is crucial for withstanding anthropocentric tendencies in education (*cf.* Quinn *et al.,* 2015). However, research has indicated that children have limited experiences of the natural world (Fägerstam, 2012). It is therefore suggested that education places more emphasis on learners having first-hand experiences with the more-than-human. Increased interaction with the more-than-human has the ability to develop learners' ecological literacy. Experiences with the more-than-human have the ability to develop learners' ecological literacy (Orr,1992). According to Orr (1992), ecological literacy is the ability to understand how natural systems work to make life on earth possible. When a person is ecologically literate it means that that person understands the ways in which ecosystems are organised and function. In the school context, being ecologically literate will allow learners to understand the diversity found in nature, the interrelatedness of all entities in nature, as well as the extent to which humans are dependent on the more-than-human (Quinn *et al.,* 2015). Teaching for ecological literacy is imperative for addressing the human-centredness of anthropocentrism, and encouraging positive relationships between humans and the more-than-human (*cf*. 2.4). This is because knowledge on ecosystems has the ability to create sustainable communities, which is crucial for challenging anthropocentrism and ensuring the survival of mankind (*cf*. Orr, 1992).

Based on my findings surrounding anthropocentrism and its extensive impact, it is my contention that anthropocentrism needs to be addressed in an attempt to minimise the degradation of the environment. As ecocentrism is considered to be a response to anthropocentrism, a shift from an anthropocentric to ecocentric worldview is imperative (*cf.* Kruger *et al.,* 2020). The implications of what such a shift might entail, is discussed in detail in the next chapter.

2.6. SUMMARY

Through anthropocentrism, intrinsic value is ascribed to humans. When such a statement is independently viewed, it in itself does not seem to be problematic. However, anthropocentrism not only ascribes intrinsic values to humans, but it also disregards the value of all other entities that are not human. By prioritising the value of humans over other entities, it excludes the needs of the more-than-human, and manifests attitudes and practices that negatively impact on other species and the environment (*cf.* 2.2.1). It is because of this negative impact of anthropocentrism on the more-than-human, that it is often criticised. Finding solutions to anthropocentrism is challenging, because it is deeply rooted in Western culture and dates back to biblical times (*cf*. 2.2.2).

Anthropocentrism is criticised in an ontological and ethical sense (*cf*. 2.2.3). The ontological criticism of anthropocentrism lies in the mistaken belief that man is the most important entity on earth. Together with that, humans believe that they hold a privileged position over the more-than-human (*cf*. 2.2.2). This notion is often responsible for creating a disconnect between humans and the natural world. It is therefore accurate that anthropocentrism is criticised in the ontological sense (*cf*. 2.2.3). Anthropocentrism is also criticised in an ethical sense. This criticism stems from the harm that humans cause to entities that are not human, when prioritising their needs and interests over such entities (*cf*. 2.2.3).

This criticism of anthropocentrism is justified because of the various implications it holds for the environment. Because anthropocentrism causes humans to view the more-than-human as mere resources for humans to use as they see fit, it often causes harmful interactions between humans and nature (*cf*. 2.3). It is believed that environmental problems started to intensify during the industrial era. This can be ascribed to a society that started to surpass the earth's productive capacity, and continues to do so. Humans exploit ecosystems and their resources in the name of growing social, economic and political structures (*cf.* 2.3). The fact that humans allow ecosystems and their resources to be exploited, is indicative of an anthropocentric worldview.

The ways in which a person views the world (their worldview) is affected by the relationship that exists between humans and the more-than-human. Because people's

relationships with the environment differ, so too will their worldviews. The worldview of a person has a significant influence on their views on environmental problems (*cf*. 2.4). One can distinguish between two worldviews, namely an anthropocentric worldview and an ecocentric worldview. These worldviews stand in stark contrast to one another because of their differences in terms of the ways in which they view human relationships with the environment (*cf*. 2.4). From an anthropocentric worldview, humans assume the superior position in an alimentary chain. This position not only prioritises the needs of humans, but in doing so it also disregards the needs of the more-than-human because of the notion that all other entities are inferior to humans (*cf*. 2.4). From an ecocentric worldview, the well-being of entities other than humans, is considered equally as important as the well-being of humans. These worldviews can also affect education and be affected by education. This is because education has the ability to influence human perspectives, attitudes and relationships, and vice versa (*cf*. 2.5).

Worldviews on education differ from country to country, and these differences may influence the type of relationships that exists between humans and the environment within specific communities (*cf.* 2.4). One of the main determinants of whether an anthropocentric or ecocentric approach to education is adopted, is the school curriculum (*cf*. 2.4). A school curriculum dictates which information is important enough to study. Governments are responsible for developing curricula and teachers are responsible for implementing them. These parties therefore have the power to impact on human perspectives, attitudes and relationships. This also pertains specifically to human perspectives on the environment, attitudes toward the environment and their relationship(s) with the environment (*cf.* 2.4). Evidence suggests that anthropocentrism became prevalent in school curricula in developed countries in the West during the industrial era. This came as better living conditions arose due to improved production and technology. When people's living conditions changed, so too did education. This is because the ways in which science, technology and human labour was utilised, had changed due to the industrial era. The problem is that these teachings created the misconception that humans are the masters of nature, and that they are therefore also able to use its resources as they see fit (*cf.* 2.4). This has led to the impression that contemporary school curricula strengthen anthropocentric people-environment relationships (*cf*. 1.1; 2.4). From an

anthropocentric perspective, ecology, humanity, nature and people are treated as if they are unrelated to one another (*cf.* 2.5). This view not only has a negative impact on the environment, but also on education. In my view, the consequence of the influence of humans on the more-than-human, and vice versa, is complex interrelationships that affect all facets of life on earth. It is therefore imperative that positive interrelationships exist between humans and the more-than-human - not only for the sake of sustainability, but also for the survival of humanity. In order to better understand the importance of the interrelationship(s) between humans and the more-than-human, an ecocentric perspective is required, as is an ecocentric worldview in education. This comes as ecocentrism is based on respect for all entities within the bionic community, and not just humans (*cf*. 2.4). Creating a shift from an anthropocentric worldview to an ecocentric worldview is essential for changing the anthropocentric tendencies of man, toward practices that are more sustainable.

The next chapter will therefore be used to determine what the educational implications of a shift from anthropocentric to an ecocentric worldview would entail for the relationships between humans and the more-than-human.

CHAPTER 3: EDUCATIONAL IMPLICATIONS OF A SHIFT FROM AN ANTHROPOCENTRIC TO AN ECOCENTRIC WORLDVIEW FOR ESTABLISHING RELATIONSHIPS BETWEEN HUMANS AND THE MORE-THAN-HUMAN WORLD

3.1. INTRODUCTION

In the previous chapter, anthropocentrism and the implications of anthropocentrism on the environment as well as on education were discussed. The aim of this chapter was to foreground the educational implications of a shift from an anthropocentric to an ecocentric worldview for establishing relationships between humans and the more-than-human world (*cf.* 1.4.2). In order to achieve the aim of this chapter, I had to gain an in-depth understanding of how a shift from an anthropocentric to an ecocentric worldview could be brought about, and what the implications of such a shift would mean for humans and the more-than-human. I therefore had to analyse the concept of ecocentrism. I further determined what the implications of an ecocentric worldview would be for education, if there were to be a shift from an anthropocentric worldview to an ecocentric worldview. In order for such a shift to be realised, it was clear that ecocentrism and ecojustice had a critical part to play in this realisation (*cf.* 2.5). This justifies a discussion of ecocentrism, ecojustice, ecojustice education, the central components of ecojustice, as well as the framework upon which ecojustice is based. Through this discussion, the educational implications of a shift from an anthropocentric worldview to an ecocentric worldview were established.

Within environmental thinking, the differences between anthropocentrism and ecocentrism is considered to be the most profound determinant of ecological attitudes (Miklos, 2014). In the previous chapter, the implications of an anthropocentric worldview, specifically pertaining to education and the interconnectedness between humans and the more-than-human world, were discussed (*cf*. 2.4). It can be said that technological development during the industrial era lead to the increased anthropocentric tendencies of man. It is also evident that anthropocentrism became prevalent in contemporary school curricula during this period (*cf*. 2.6). The problem

with anthropocentrism, and specifically anthropocentrism in education, is that it creates a distorted view of the more-than-human world. This, in turn, negatively impacts on the relationship between humans and the more-than-human (*cf*. 2.4).

Because this chapter focuses on the educational implications of a shift from an anthropocentric to an ecocentric worldview, it also refers to the measures needed for establishing relationships between humans and the more-than-human. The key to changing environmental conditions lies in changing the ways in which we, as humans, view the planet and its other entities (*cf.* 2.4). It is crucial that the tendency of humans to view the planet as a limitless resource should change. A shift is needed from the view that the earth can be used as an infinite resource, to a view that acknowledges the earth as a living organism that is affected by its interaction with other organisms (Inglis, 2008). When attempting to create such a shift in perspective, ecocentrism and ecojustice have a pivotal role to play, and can be assisted through education (*cf.* 2.4). As anthropocentrism allows for human dominance over nature, it also places humans in a position of supremacy in an alimentary chain within an ecosystem. This is in stark contrast to ecocentrism, which focuses on the ecosystem itself. Here humans are considered to be part of a biotic community that has respect for all entities found within that community (*cf*. 2.4). It can be argued that ecocentrism is a position that considers all entities found within the biotic community, to be an integral part of life on earth (Donev, 2019).

3.2. ECOCENTRISM

It is said that ecocentrism ethics stands in contrast to anthropocentrism (Veinovic & Stanisic, 2018). Anthropocentric ethics centres on mankind and the importance of its needs, but ecocentric ethics focuses on the need for ethics to "be spread onto other living creatures, even on the inanimate world in its entirety" (Pavlović, 2013: 22-23). Ecocentrism is, in other words, not only concerned with the well-being of humans, but it is also concerned with the prosperity of other living creatures and the inanimate world.

3.2.1. CONSEPTUALISATION OF ECOCENTRISM

Ecocentrism is considered to be a comprehensive concept that stands in contradiction to anthropocentrism (Kopnina, 2012). Whereas anthropocentrism values the more-than-human through a lens of the value it holds for humans in terms of human welfare, human interests and revenue, ecocentrism ascribes value to all living and non-living parts of the environment (Washington, 2017). The concept of ecojustice is defined by Gray, Whyte and Curry (2018: 131) as

> a worldview that recognises intrinsic value in ecosystems and the biological and physical elements that they comprise, as well as in the ecological processes that spatially and temporally connect them… Ecocentrism thus contrasts sharply with anthropocentrism, the paradigm that currently dominates human activities, including responses to ecological crises…

Ecocentrism is regarded as a holistic approach from which the relationships between individuals and communities, as well as the consequences of these interactions, are viewed (Donev, 2019). Ecocentrism can, in other words, be seen as a review of the relationship between the individual and the community, as well as the consequences that these relationships have on humans and the more-than-human (*cf*. Donev, 2019). Ecocentrism proceeds from the view that the environment carries the same value as humans, and because entities like animals, plants and rivers form part of the environment, they are also regarded as being rights-holders, or objects that warrant the same care as humans (Schlosberg, 2007). This is because all other entities on earth that are not human, are considered to be philosophically significant, and therefore also deserving of recognition and respect from humans (Schlosberg, 2007). It can therefore be said that those who view the world from an ecocentric point of view, consider all entities on earth to be equally valuable. Keeping in mind that all entities are considered equal in terms of their value, the more-than-human warrants similar treatment from humans as the treatment humans condone towards one another.

However, at the start of the 21st century, during the industrial era, it became increasingly evident that human interaction with the natural world has become problematic (*cf*. 2.2.3). The interaction(s) between humans and the natural world is very complex and has become increasingly negative because of human activity (*cf*. 2.2.1). With industrialisation, societies underwent significant social and economic

changes through increased manufacturing. This implied replacing hand tools with automated machines (Vries, 2008). According to the IPCC (2007), increased manufacturing during this period elicited substantial changes in the climate. The danger of climate change lies in the changes it causes to the earth's atmosphere. Changes in atmospheric properties can have a cooling or a warming effect on the earth's climate system. It has been found that since the beginning of the Industrial era, industrialisation has generally had a warming effect of the earth's climate (IPCC, 2007).

In order to address the problems associated with interactions between humans and the natural world, a better understanding of human-environment relationships is needed (Bazaliy, 2021). After the Industrial era, a post-industrial culture was imminent because of the negative societal effects that industrialisation has had on humans and the environment. The societal effects of industrialisation included dangerous workplaces, child labour, discrimination against women, and environmental damage. The aim of a post-industrial culture was to address such issues, and great hope existed specifically for socio-ecological cooperation to counter the environmental damage that had been done (*cf*. Vries, 2008). It is believed that if humans are able to view the world from an ecocentric perspective, such environmental damage can be mitigated (*cf*. Horsthemke, 2019).

3.2.2. ASSUMPTIONS UPON WHICH ECOCENTRISM IS BASED

The notion that ecocentrism can slow or halt the deterioration of the environment, is largely based on the assumption that ecocentrism improves the relationship between humans and the more-than-human (*cf*. Kruger *et al.,* 2020).

According to Bazaliy (2021), there are certain obstacles preventing humans from a relationship with the more-than-human. The first of these is that some people lack the need for personal development, and the second is the inability of civilization to encourage people to build a relationship with the more-than-human. It was, however, found that the inability of humans to recognise the interconnections between themselves and the more-than-human, could be mitigated by developing an ecocentric consciousness amongst individuals. Developing an ecocentric consciousness involves the ability to recognise the value of all life-forms on earth and also to become

aware of the consequences when natural resources are used recklessly. Being more conscious of the value of other life-forms and the impact that humans have on them, will contribute to positive relationships between humans and the more-than-human (*cf*. Bazaliy, 2021). Many countries are attempting to expand on the social and environmental development in their societies as a means to lower the chances of exceedingly harmful local and global environmental occurrences (*cf.* Bazaliy, 2021). These occurrences include climate change, deforestation, overfishing and water and air pollution (*cf*. 1.1).

Emphasis is placed on social and environmental development because of the relationships that exist between human society and the natural environment. It is said that such relationships are fundamental to all other relationships in society (Liu, 2008). These relationships can either be anthropocentric or ecocentric in nature (Rülke *et al*., 2020). A central component of anthropocentrism is that of a human moral obligation towards fellow humans, whereas ecocentrism recognises the moral status of all living things, irrespective of their organisational level (Gorke, 2003). Whether humans adopt an anthropocentric or ecocentric perspective is based on their perception of, and interaction with, the more-than-human (*cf*. Rülke *et al.,* 2020). Human interaction, or a lack thereof, with the more-than-human therefore determines whether a person's relationship with the more-than-human is anthropocentric or ecocentric in nature. This in turn also holds a number of consequences for humans and the more-than-human.

Ecocentrism also emphasises the intrinsic value of interrelated ecological systems (Quinn *et al.,* 2015). The intrinsic value of ecological systems stems from an ecocentric view that is based on the belief that nature has intrinsic value, independent of its commodity value to humans (Rea & Munns Jr., 2017). Intrinsic value therefore suggests that the more-than-human has value, even if it is not beneficial to humans.

3.2.3. THE IMPLICATIONS OF AN ECOCENTRIC WORLDVIEW ON EDUCATION

It is said that humans can gain a deep understanding of their responsibility towards the environment through education (Horsthemke, 2019). Education is considered to be one of the solutions to bring about change in human attitudes towards the environment (*cf*. 2.5). This notion is based on the assumption that education has the potential to increase learners' factual and cognitive awareness, and influence learner

attitudes and behaviour toward the environment (Horsthemke, 2019). This is so because education is regarded as a system of knowledge and values that allow specific skills and habits to develop. The knowledge, values, skills and habits obtained through education then form the basis for developing cognitive capacities and a perception of the world (Trnavac, 2014). Education is implemented through educational content and transferred to individuals by means of different subjects found in and regulated by school curricula (Vilotijević, 2014). Learner knowledge, skills, values and habits are therefore dependent on the educational content found in the subject(s) that they are taught. In order to address the environmental issues that threaten the biosphere, new ways of thinking are imperative. To think anew and protect the biosphere, an ecocentric approach towards teaching and learning is required (Shoreman-Ouimet & Kopnina, 2016).

When considering the implications of ecocentrism on education, it refers to the ways in which education can change to encourage better interaction between humans and the more-than-human. This is because of the aims of ecocentrism that pertain to changing the conventional ways in which people view the environment (Donev, 2019). Changing the anthropocentric views that people have of the more-than-human is possible because of the ability of an ecocentric worldview to question and critique the ways in which civilisation is conditioned to perceive the more-than-human world (*cf*. Donev, 2019). This is significant because of the influence that humans have had, and continue to have, on the environment.

The impact of humans on the environment is considered excessive and detrimental to mankind and all life on Earth. Population growth and the advancement of technology reduces the availability of the natural resources needed not only for the survival of humans on Earth, but also for the survival of the earth itself (Horsthemke, 2019). It is therefore crucial that current human-environment relationships be reconsidered. These worldviews, in turn, also affect the ways in which people make sense of the need for finding solutions to environmental issues (Tracana & Carvalho, 2012). In terms of solutions to environmental problems, it is therefore necessary that all humans develop an understanding of their responsibility to the environment (*cf.* Tracana & Carvalho, 2012). It is said that humans can gain a deep understanding of their responsibility toward the environment by implementing environmental education and ecojustice education (Horsthemke, 2019).

3.2.3.1. ENVIRONMENTAL EDUCATION

Evidence of environmental ethics is found in environmental education, as it focuses on providing learners with a basic knowledge of ecology, ecological systems and important ecological issues that influence the world we live in. It also encourages an appreciation for nature (*cf.* Irving, 2019). In the United States, Europe and Australia, ecologically orientated content is considered to be environmental education (Martusewicz & Edmundson, 2005).

Environmental education has been in existence for almost five decades and originated during a time of socio-ecological oppositional protests (*cf*. Reddy, 2021). According to UNEP (2021), environmental education is a process aimed at developing a global population that is aware of and concerned with the environment and the problems associated with it. Sauvé (2002: 1) defines environmental education as “an essential dimension of basic education that lies at the root of personal and social development: the sphere of relationships with our environment, with our common home of life”. Environmental education can therefore be regarded as a field in education that responds to environmental crisis (*cf*. Reddy, 2021). Curren and Metzger (2017) further argue that environmental education is an effective way to act on the environmental issues that the world is currently faced with, because it fundamentally teaches sustainability. However, educational content becomes outdated if it does not change as science and technology changes. Educational content can therefore only stay relevant if the subject content in the school curricula is frequently upgraded. When educational content is reflective of the modern world, modern-day problems and solutions can be explored. It can further be said that ensuring that educational content stays relevant, can also make a significant difference to the environmental problems that are experienced on a local and global level (*cf.* Veinovic & Stanisic, 2018). In order to incorporate environmental ethics in the school curricula, subject content must be specifically selected to include evidence based on science (*cf.* Horsthemke, 2019). When teachings on sustainability are based on scientific evidence, a shift can be created from an anthropocentric worldview to an ecocentric worldview. Such a changed approach to the ways in which humans view the environment, and their relationship with the environment, is essential for the survival of the natural world (*cf*. Horsthemke, 2015).

With environmental education and education for sustainable development, the value of nature is still measured in terms of the benefits it holds for future generations of human beings (Horsthemke, 2019). Based on the Organization for Economic Cooperation and Development's report on the *Economic significance of Natural Resources* (OECD, 2011), "[n]atural resources, both renewable and non-renewable, and ecosystem services are a part of the real wealth of nations. They are the natural capital out of which other forms of capital are made." By implication, natural resources are beneficial to humans because they contribute to the prosperity of man. It can be said that this prosperity not only pertains to the financial wealth of humans, but also to other aspects, such as people's mental and emotional well-being (*cf*. OECD, 2011).

According to Horsthemke (2019), a lack of evolutionary science in environmental education often hinders human-environment relationships to be fully cultivated. Critics of environmental education have argued that educating for sustainable development often promotes an industrial worldview that stands in contrast to the holistic understanding of sustainability (Washington *et al.,* 2017). This can be ascribed to a lack of teaching different worldviews and ethics in education (*cf*. Washington *et al.,* 2017). It is said that education that lack a variety of worldviews and ethics, undermines the efforts that are in place to teach learners about the significance of valuing and protecting the environment (*cf.* Washington *et al.,* 2017). Some academics like Martusewicz and Edmundson (2005) criticise environmental education for the ways in which it defines ecology, because of the ways in which ecology is often presented in education. The notion of ecology is often treated as the management of natural systems as if they were entities that are separate from, or outside of, human communities (*cf*. Martusewicz & Edmundson, 2005). It is my belief that ecojustice education is best suited to address the criticism of teachings on sustainability and ecology, because of the way that it educates learners on different worldviews and ethics, and the emphasis it places on the interconnectedness of ecology and human communities (*cf*. Kruger *et al.,* 2020).

3.2.3.2. ECOJUSTICE EDUCATION

From an ecojustice perspective, it is important to note that there is a difference between teaching for environmental justice and teaching for ecojustice. This difference is determined by who the justice is for (Bolich-Wade, 2022). Environmental justice

centres on the environment and the ways in which the environment can serve people, while ecojustice pursues justice for the environment itself as well as for culture (*cf*. Bolich-Wade, 2022). The United States Environmental Protection Agency (2022) defines environmental justice as “the fair treatment and meaningful involvement of all people regardless of race, colour, national origin or income with respect to the development, implementation and enforcement of environmental laws, regulation and policies”. By implication, environmental justice seeks justice for the environment by implementing various laws, regulations and policies to protect it. According to Washington *et al.* (2018), environmental justice pertains to the well-being of the environment in terms of the ways in which it can serve people, whereas ecojustice pursues justice for the environment and for culture. Environmental justice is therefore inherently anthropocentric, as it does not advocate primarily for environmental protection and conservation, but for access to environments that are healthy, clean and safe for humans (*cf.* Washington *et al.,* 2018).

In order to remove sustainability from anthropocentric values, and infuse it into an ecojustice education framework, the concept of sustainability must be reclaimed. Sustainable communities are thought to be communities that acknowledge that natural systems do not have the ability to regenerate themselves. Human input is needed to sustain communities (Martusewicz *et al.,* 2015). Sustainable community development is considered to be a local concept (), whereas sustainable development can be described as a global concept (van Schalkwyk & Cilliers, 2013). This means that sustainable development will not suffice, if sustainable community development does not take place. This makes sustainable community development not only crucial for sustainability, but also for the promotion of relationship(s) between humans and the more-than-human (*cf.* Van Schalkwyk & Cilliers, 2013).

To promote healthy relationship(s) between humans and the more-than-human world, and encourage sustainability, education plays a pivotal role. With that being said, it should also be noted that instruction, should be integrated and interdisciplinary in terms of environment and social phenomena if it is to be effective (Veinovic & Stanisic, 2018). Ecojustice education is one of the approaches to education that allows for the integration of environmental and social phenomena. This is because of the combination of evolutionary science with the ethics of sustainability found in

environmental education, and the social and moral values reflected by social justice education (*cf*. Horsthemke, 2019).

An ecojustice approach to education integrates social justice with the desire to achieve ecological stability (Walsh, Böhme, Lavelle & Wamsler, 2020). Ecojustice education, consequently, allows for the strengthening of attitudes towards justice for nature. It can therefore be said that ecojustice is an embodiment of ecocentric values, and because of this, there cannot be ecojustice without ecocentrism.

As ecojustice is considered to be an embodiment of ecocentrism, ecojustice and ecocentrism are crucial for improving the relationship between humans and the more-than-human. In doing so, it also promotes sustainable practices amongst humans. This can be achieved because of the ability of ecocentrism to acknowledge the intrinsic value of the more-than-human, and of ecojustice to seek justice for the more-than-human (*cf*. Washington *et al.,* 2018). In order to promote ecocentrism, and so too ecojustice, a shift from an anthropocentric worldview to an ecocentric worldview is imperative.

3.3. THE SHIFT FROM ANTROPOCENTRISM TO ECOCENTRISM

Anthropocentrism is based on the belief that humans as individuals, and as a species, are more valuable than any other entities that exist, and that their needs are therefore superior to the needs of other entities. Ecocentrism, on the other hand, acknowledges the intrinsic value of all lifeforms and ecosystems (*cf.* 2.2.1; Washington *et al.,* 2017). The contrast between anthropocentrism and ecocentrism is apparent from the broader vision of the world, as reflected in ecocentrism. As the aim of this study is to determine the potential of South African curriculum statements to promote more-than-human communal relationships, great emphasis is placed on the more-than-human (*cf*. 1.1). Communal relationships are defined by Clark and Mills (2012) as a relationship where benefits are provided in response to a need and out of concern for the other party's well-being. Receiving benefits in such connections does not imply a specific commitment to return the related benefit, as it does in trade partnerships. Because ecocentrism foregrounds the value of the more-than-human and not just the value of humans, like with anthropocentrism, a shift from an anthropocentric worldview to an ecocentric worldview is imperative (*cf*. Irving, 2019). Making this shift from an

anthropocentric worldview to an ecocentric worldview means that humans are able to make decisions in their personal and professional lives that are reflective of ecocentric values, rather than of anthropocentric values. Ecocentric values are reflected in changed human behaviour and can be ascribed to the ability of humans to acknowledge the ways in which hierarchised relationships are entwined with violence towards the more-than-human (Martusewicz *et al.,* 2015).

Like with anthropocentrism, evidence of ecocentrism is also found in ancient religious belief systems (*cf*. 2.2.2). Anthropocentric principles in Western religion centres on the inherent value of humanity, whereas the ecocentric principles found in Eastern religion traditions focus on the position that humanity has within a broader system (Corbett, 2006). It can therefore be said that ecocentrism focuses on the importance of living organisms and ecosystems, and centres on the need for preserving the natural world. Opposed to this, anthropocentrism that focuses on mankind, and on providing for the needs of humans regardless of the damage it causes to the environment (Veinovic & Stanisic, 2018). Because anthropocentrism has a negative impact on the environment, the need to manage environmental damage has intensified (*cf*. 2.4).

To minimise environmental damage, calls for sustainable practices and sustainable development have increased over the last four decades (*cf*. 1.1). It can be said that an anthropocentric approach to sustainable development positions man at the centre of importance, and therefore focuses on fulfilling the needs of mankind. The opposite is true for an ecocentric approach for sustainable development. This is because an ecocentric approach to sustainable development places the emphasis on the balance of the environment. The intention with placing the environment at the centre is to refute any obstacles that may affect the natural abilities of the environment. This includes using the environment to meet the requirements of man (Alagoz & Akman, 2016). By implication, sustainable cultures can therefore also be regarded as being ecocentric, and the importance of ecocentrism in human-environment relationships cannot be denied (*cf.* Martusewicz *et al*., 2015).

According to Bowers (1995), ecocentrism considers humans and the more-than-human to be equal participants in nature. This mplies that humans have a responsibility not to harm creatures unnecessarily or overuse and/or pollute ecosystems. In contrast to anthropocentrism, the root metaphors of ecocentrism

suggest that humans have a moral responsibility to nature. Human life and the lives of other living and non-living things are considered “equal participants in a moral universe” (Martusewicz and Edmundson, 2005: 80). It is because of this perspective that ecocentrism is often labelled as ‘anti-human’, and therefore seems contradictory to concerns for social justice. Social justice centres on fairness between individuals in society, and the equal opportunities, wealth, and social privileges that it is able to create (Smith, 2014). But Washington, Chapron, Kopnina, Curry, Gray and Piccolo (2018) disagree with Smith’s statement, and insist that ecocentrism is not ‘anti-human’, but that ecological integrity is in fact crucial for human existence. This is because environmental and social systems are interconnected, and so too are the social and ecojustice concerns they are associated with. Ecocentrism therefore also closely relates to ecojustice, as it not only supports the notion of inter-human social justice, but also ecojustice for the more-than-human world (Baxter, 2004). In other words, ecocentrism ascribes value to ecological collectives, and ecojustice upholds humans’ moral duty to acknowledge such values (Washington *et al.,* 2018). Both ecocentrism and ecojustice therefore stand in contrast to anthropocentrism.

As a branch of the United Nations, UNESCO has been developing a variety of programs in an attempt to help curb environmental challenges. In order to do, so the organisation called on the field of education to intervene and implement practical actions that would assist the United Nations in addressing environmental issues. The goals set out by UNESCO for the education sector was to equip individuals with the knowledge, skills and attitudes to positively impact on the increased environmental problems the world has been facing since the 1970s (Dentith, Kearns-Burke, Conmy, Frimpong & Nadeau, 2014). Because of the magnitude of the environmental problems that are experienced the world over, calls for educational structures that enforce the cultivation of harmonious interaction between society and nature, are on the rise (*cf.* Bazaliy, 2021). It can therefore be said that education is regarded as a response to the environmental crisis.

3.4. ECOJUSTICE

The proponents of ecocentrism and ecojustice are similar, in that both views centre on the importance of ascribing value to the non-human. From an ecojustice perspective, intrinsic value is assigned to natural elements, and humans are also considered to be part of the natural world (Washington *et al*., 2018). It can therefore be argued that from

an ecojustice perspective, humans and the more-than-human should be respected for the value they hold, because all the natural elements in the natural world are valuable in their own right. Because some natural elements within the natural world, like the non-human, cannot defend themselves from injustices, ecojustice advocates for their justice (*cf*. Crist & Kopnina, 2014). It is for this reason that ecojustice is defined as justice for the non-human (Washington *et al*., 2018).

However, justice for nature has long been affected by a strong anthropocentric bias (Washington *et al.,* 2018), and that is why there is an increased call for ecojustice. Bonnett (2016) defines ecojustice as a concept that "questions the rampant 'human supremacism' that currently pervades our ideas of how the Earth's resources should be distributed, claiming that the needs of inhabitants of the natural world must be properly taken into account". It is therefore my contention that ecojustice challenges the ways in which we, as humans, view ourselves in relation to nature, and is able to bring about ecological stability. This can be ascribed to the ability of ecojustice education to accurately inform individuals of ecological challenges that local and international communities are faced with (*cf*. Bolich-Wade, 2022). This is done by promoting positive human-environment relationships instead of separating people's problems from environmental problems (Dentith & Thompson, 2017).

3.4.1 CONCEPTUALISATION OF ECOJUSTICE

Parker (2016, 64) defines ecojustice by stating that "[e]cojustice isn't saving the animals, it's motivating others to care about the animals. It's about uprooting cultural assumptions, not trees. It's a lot more complicated than saving the environment, it's about saving our connection to the environment. Each time we consume we break down our connection to nature by not giving back. Ecojustice wants people to change the way they think, creating strong democracies across the globe". Ecojustice, by implication, has the ability to enlighten humans on the ways in which they are interdependent and interconnected with non-humans, as well as the benefit that these connections have, in and for the natural world. It can therefore be said that one of the most important functions of ecojustice is to enable humans to think differently about their interaction with the more-than-human (*cf*. Martusewicz *et al.,* 2015). When we, as humans, learn to think differently about the more-than-human, the ways in which

we interact with the more-than-human are thought to also change. When humans come to the realisation of the significant impact that the interactions between humans and the more-than-human have on one another, the ways in which humans view the more-than-human changes, and so do their actions. The air that we breathe, for example, would not be possible if it wasn't for plants and trees producing our oxygen (*cf*. Elton, 2019). Regarding non-human influences on the world, this is not limited to animals, insects, or groups of microorganisms. Climate and geography, as well as all ecosystem aspects, influence for example how cities are formed, politics are practiced, and healthcare is developed. We as humans therefore exists in a complete relationship with all other life forms on earth. It can be said that humans live in such a close relationship to the non-human, that no human can exist without it (Elton, 2019). Ecojustice should therefore be considered as a fundamental factor in ensuring the survival of future species by addressing environmental issues such as like deforestation, overfishing, pollution and climate change which are affecting humans and the more-than-human. It can be said that ecojustice focuses specifically on the survival of the more-than-human by addressing the violence committed against the more-than-human by humans (Marais-Potgieter & Faraday, 2022).

Ecojustice, also known as ecological justice, is the ability to acknowledge that humans, and all other living, non-human, and abiotic natural processes, are inextricably linked to one another. If the health and well-being of any one of these interconnected systems suffer, the damage spreads to the others. It can be said that the opposite is also true, and when these entities are able to peacefully co-exist, they will flourish. By implication, practicing ecojustice means that humans are able to recognise the boundaries of the planet and all other living and non-living entities (*cf*. Washington *et al.,* 2018). Ecojustice also involves developing and allowing for the implementation of regenerative systems that protect the well-being of humans and the more-than-human (*cf*. Kruger *et al*., 2020). Ecojustice is therefore considered to be a solution to environmental degradation because of its ability to examine the cultural dilemmas of environmental dilemmas (Dentith & Thompson, 2017). This is because ecojustice is based on the assumption that environmental and social injustices are issues that cannot be separated from one another. Bowers (2009) compares the effects of social justice issues pertaining to class, race and gender inequalities to that of environmental issues like global warming. This is because of the significant effect that environmental

injustices can have on those affected by social injustices. The poor, for example, are more affected by changes in the climate because of their inability to respond to crises such as like flooding and drought (*cf*. Bowers, 2009). Ecojustice, by implication, promotes social justice, and future social justice as well, by attempting to preserve the ecosystems needed for societies to thrive (Fios, 2019). It is therefore imperative that the more-than-human, specifically the non-human, also have the same right to justice as humans do. Washington (2015) drew comparisons between the ways in which inter-human justice and ecojustice for the non-human world, and social and environmental systems are entwined, and found that because of their similarities, social and ecojustice concerns are also interconnected. It can be argued that humans and the non-human deserve to share, and have equal access to, environmental resources. According to Washington *et al.* (2018) and Kopnina (2012), access to environmental resources plays and important role in society's ethical progress and is considered to be a way of contributing to the moral accountability of humans. When society is able to make ethical progress, and humans become more morally accountable, planetary collapse can be avoided (Marais-Potgieter & Faraday, 2022). This leads to the argument that the more-than-human should have the same rights as humans. The concept of the more-than-human having rights, is known as earth jurisprudence. When put differently, earth jurisprudence is regarded as being indicative of the existential right of nature, and all the species found in nature, to exist (Marais-Potgieter & Faraday, 2022).

Earth jurisprudence is, in other words, considered to be a philosophical expression of ecocentrism responsible for placing a moral value on all environmental entities that are not human (Koons, 2009). It can therefore be said that all entities that exist on Earth have the right to exist, and should be valued by humans. However, based on the environmental issues that the world is currently faced with, it is clear that no entities on Earth, especially those that are non-human and non-living, are naturally safeguarded from environmental injustices. Environmental injustices are evident from changes experienced in the biosphere that stem from deforestation, overfishing, pollution and climate change (1.1; 3.4). It is important to note that environmental and social injustices are interrelated (*cf*. Fios, 2019). It is therefore clear that finding common ground relating to environmental conservation and social justice is imperative. In the process of finding common ground, an understanding of the

interconnectedness of cultural and environmental degradation is needed. This comes as cultural values and hierarchical systems influence how humans treat the environment and the living things in it, and often leads to injustices against the environment (Bolich-Wade, 2022). Environmental injustice is considered to be a form of social injustice that references the disproportionate subjection of individuals and/or groups to ecological risks, like pollutants from industrial sites, without receiving any of the benefits from such polluters or industries (Adeola, 2001).

Acknowledging the interconnectedness between environmental and social injustices, helps individuals to understand that human thinking and behaviour has to change in order to have a positive effect on the environment (Dentith & Thompson, 2017). It can be said that ecojustice is based on the notion that mankind is able to live within the natural limits of all creation (*cf.* Bolich-Wade, 2022). Ecojustice is, in other words, considered to be a concept that is based on the idea that humans can coexist with all of creation within its natural boundaries. Because of the integration of social justice components in ecojustice, and vice versa, ecojustice affects a person's decision-making when considering the use of natural resources (Martusewicz *et al.,* 2015). Martusewicz *et al.* (2015: 23) defines ecojustice as an understanding that "local and global ecosystems are essential to all life; challenging the deep cultural assumptions underlying modern thinking that undermine those systems; and the recognition of the need to restore the cultural and environmental commons". An ecojustice perspective allows for the addressing of deep-rooted cultural assumptions of modern thinking that undermine the importance of other life forms that are not human. In addressing the existing cultural assumptions, it provides cultural and environmental common ground.

3.4.2. ECOJUSTICE AND ITS IMPACT ON CULTURAL AND ENVIRONMENTAL COMMONS

Commons refer to the shared cultural and natural resources that are available to all members of a society, such as air, water and land. Whether owned individually or publicly, these resources are held in common, which means that anybody can enjoy them. Commons also relate to natural resources that are managed by groups of people for individual and/or community benefit. The management of natural resources form part of a range of informal norms and values, also known as social practices, as a governing mechanism (Basu, Jongerden & Ruivenkamp, 2017). Based on the work

of Martusewicz *et al*. (2015), ecojustice allows the distinction between cultural and environmental commons.

Cultural commons can be defined as the "forms of knowledge, skills, and patterns of mutual support shared among humans that exist in every community and represent the culturally diverse legacies that are sustainable, and less dependent upon a money economy and consumerism" (Dentith *et al.,* 2014: 710). Cultural commons are associated with ecojustice education, and is thought to be a possible solution to the ecological crisis because it addresses the cultural roots of such a crisis. The cultural roots of a crisis can be addressed through cultural commons, because of its ability to strengthen self-reliance within communities by encouraging the discovery of the talents and interests of the individuals within those communities. When people discover their talents and interests, it can be used to contribute positively to their communities (Griswold, 2017). On that account, cultural commons emphasise the relational nature of existence among humans themselves, between humans and natural systems, and within natural systems themselves (*cf.* Dentith *et al*., 2014). Cultural commons not only assist communities in rediscovering their cultural identities, but it also enables them to reinstate practices that have a smaller impact on the environment (Griswold, 2017). It is, however, not only cultural commons that have the ability to impact on the environment, but also the act of securing environmental commons (Vasstrom, 2014). This is significant because in order to reach the Sustainable Development Goals, as set out by the United Nations (*cf*. 2.4), it is said that global environmental commons have to be secured. In order to secure global environmental commons, we as humans have to conserve and sustainably manage the resources and ecosystems that we share. The ability of humans and the more-than-human to thrive, is dependent on the resources and ecosystems that we share. So too are the risks associated with not conserving and sustainably managing shared resources and ecosystems. Integrated action is therefore needed to sustainably manage environmental commons (UN, 2021).

According to international law, the high seas, the atmosphere, Antarctica and outer space are global environmental commons, because they do not fall under any regional or national jurisdiction (Brousseau, Dedeurwaerdere, Jouvet & Willinger, 2012). Rain forests, land, biodiversity, ecosystems and climate are considered to be environmental commons. Even though some environmental commons are found within distinct

jurisdictions, their existence confer benefits to mankind beyond these jurisdictions. Because environmental commons are not bound by any parameters, they are inherently connected. In order to sustainably manage environmental commons, integrated action is required. Global environmental commons are fundamental for existence on Earth, and also for the successful functioning of societies and economies (Brousseau *et al*., 2012). Because of dominating ideologies, mankind is failing to safeguard these commons, and as a consequence, the world is becoming socially, culturally and environmentally impoverished (Dentith *et al*., 2014). Such impoverishment can be catastrophic to humans and the more-than-human, because of the damage it is able to cause (*cf*. 2.3). I therefore believe that cultural and environmental commons are interrelated and crucial for all entities on Earth to not only survive, but thrive. Because ecojustice aims to restore cultural and environmental commons, ecojustice is therefore also pivotal for the future existence of these entities.

This can also be ascribed to the ability of ecojustice to serve as a catalyst in restoring cultural and environmental commons damaged by man. Ecojustice allows for the analysis of the unequal power relations that exist between humans and nature (Dentith *et al.,* 2014). Because ecojustice is concerned with acknowledging the value of species other than human, it endorses justice for the more-than-human (Shoreman-Ouimet & Kopnina, 2016). Ecojustice also closely relates to social justice. Where social justice pertains to the rights of and justice for humans, however, ecojustice pertains to the right of and justice for all living, non-living and non-human entities on Earth (Washington *et al.,* 2018). By implication, ecojustice is based on the assumption that social justice issues are inseparable from ecological well-being (Martusewicz & Schnakenberg, 2010). It can therefore be said that the concept of social justice and ecological well-being are intertwined and inseparable.

3.4.3. GOALS OF AN ECOJUSTICE PERSPECTIVE

Keeping in mind that social justice and ecological well-being are interrelated, two goals of an ecojustice perspective are foregrounded by Martusewicz and Schnakenberg (2010). The first goal of an ecojustice perspective is to analyse the root metaphors of the dominant discourses responsible for rationalising social inequality and ecological deterioration. Martusewicz *et al.* (2015: 64) define root metaphors as “the buried ideological sources from which the culture draws strength and reproduces itself inter-

generationally, often over hundreds of years". A root metaphor is in other words considered to be a perspective of the world from which further perspectives, and language, is constructed.

Bowers (2009) considers root metaphors to be the language processes that are reflected in the knowledge that is carried forward from one generation to the next. These language processes are unique to specific cultures, as they are derived from the specific experiences lived in those cultures. When these narratives are encoded in words, it is called root metaphors (*cf.* Bowers, 2009). The language that we as humans use to talk about the environment, therefore has a significant impact on environmental issues. The language we use and the narratives we create are reflective of our anthropocentric or ecocentric values. This determines the relationship we have with the more-than-human because it affects the worldviews of man. Here, the importance of mother tongue education is emphasised. Mother tongue is considered to be the first language that children are exposed to in their surroundings and learns to speak. When a learner receive instruction in their mother tongue it strengthens their traditional knowledge. Strengthening traditional knowledge not only enables learners to gain a better understanding of themselves, but it also develops a sense of belonging and identity within their communities (King, 2018).

According to Mueller (2009), cultures are embedded with root metaphors that shape human relationships with the environment. Human culture influences the ways in which humans think and act. Human culture, in effect, allows for the justification or condemnation of the exploitation of the natural world, depending on the perspective from which it is viewed (*cf*. Kruger *et al.,* 2020). This emphasises the importance of root metaphors. Academics like Irving (2019) believe that ecojustice education can be effective because of its dominant ecocentric discourse. It enables teachers to engage with the language of ecology and justice, which then allows for ecojustice to be constructively reproduced. In doing so, teachers who reproduce ecojustice in education, contribute to a shift in the thought processes of learners towards greater sustainable living practices (*cf*. Irving, 2019). This is because when teachers use language that engages ecology and justice, they also develop a vocabulary that not only facilitates ecojustice, but one that also undermines anthropocentrism. In doing

so, such a vocabulary is also passed on to the learners which, in turn, results in sustainable living practices (*cf*. Irving, 2019).

The second goal of an ecojustice perspective is to identify, revaluate and revitalise common practices, knowledge and traditions that relate to the well-being and sustainable living within a society (Lowenstein *et al*., 2010). It can therefore be said that ecojustice aims promote knowledge and practices that are fundamental to societal well-being and a sustainable existence. In accepting these goals, it can be said that the purpose of ecojustice is to understand and eradicate the tension between the different cultures and ecosystems that exist on Earth (*cf*. 1.1). Eradicating tensions that exist between cultures and ecosystems also forms part of the intentions of communitarianism. Communitarianism is based on the notion that the actions and ambitions of individuals are reflective of the communities of which they form part, and that these actions and ambitions should be constructive (Waghid, 2014). Positive actions by individuals should also be extended to the more-than-human. This is because from a communitarianism point of view, individuals and the community should be jointly "engaged in a contemporaneous formation" (Eze, 2008 386). By implication, individuals and communities are dependent on one another, and on the more-than-human, to thrive. If communities thrive, it is likely that the individuals within those communities will also thrive, and if individuals thrive, it is likely that their communities will also thrive. And so too the more-than-human (*cf*. Eze, 2008).

Taking into consideration the goals of an ecojustice perspective, it is my contention that ecojustice has the ability to influence the dominant discourses within societies that have a negative effect on the ways in which humans treat the more-than-human. As previously noted, discoursed like the modernist discourse, upon which anthropocentrism is based, can be changed by adopting an ecojustice perspective (*cf*. 2.2.3). By adopting an ecojustice perspective, it not only promotes the well-being of society, but it also allows for sustainability within society. When such changes occur, the disconnect that exists between human cultures and ecosystems can be alleviated.

Ecojustice can be thought of as a principle that advocates for the intrinsic value of all entities on Earth, and acknowledges the importance of the interdependence of these entities (*cf.* Kruger *et al.,* 2020). Based on the work of O'Neill, Holland and Light (2008), the value of something is determined by the different ways in which it is considered to

matter. When the value of the more-than-human is determined, it is firstly measured in terms of how we as humans live from the world. This means that the more-than-human is considered to be valuable because of its resources, which provides us with food and energy. In a second instance, the value of the more-than-human is based on how we live in the world. Here, the more-than-human is regarded as valuable because it is the place that is used for recreation and a place where social and cultural values are formed. However, even though the above-mentioned reasons for why the more-than-human is valuable, are valid, they still refer to the benefit that they hold for humans. It therefore only pertains to the value of the more-than-human in relation to humans, rather than the intrinsic value it has for itself. That is why I find the following description of value of the more-than-human to be the most accurate. When the value of the more-than-human is considered in terms of the ways in which humans live with the world, it means that humans are able to acknowledge the intrinsic value of the more-than-human, and co-exist with it in a peaceful way. By acknowledging the intrinsic value of the more-than-human, humans are then also able to realise the interdependence between humans and the more-than-human (*cf.* O'Neill *et al.,* 2008).

3.4.4. PROMOTING ECOJUSTICE

After gaining insight into ecojustice, questions arise regarding the ways in which ecojustice can be promoted. In order to implement ecojustice, humans need to renew their views on the relationship between humans and the more-than-human. In order for people to think differently about their relationship with the more-than-human, they have to realise that the more-than-human holds intrinsic value. When humans are able to recognise the intrinsic value of the more-than-human, it will make them realise that the prosperity and survival of the more-than-human is just as important as that of humans (O'Neill *et al.,* 2008). Humans are dependent on the more-than-human to prosper and to survive, and vice versa. When humans realise that their prosperity and survival are dependent on their relationship with the more-than-human, their views on the more-than-human are bound to change (*cf*. Orr, 1992). In order for humans to come to this realisation, ecojustice has an important part to play. The thought process of humans can be impacted on by ecojustice and ecojustice education, which may allow for an ethical foundation to be created upon which sustainable living practices are based (Lowenstein *et al*., 2010). This is because ecojustice education has the ability to educate individuals on the interdependence of humans and the more-than-

human, and to emphasise the importance of these relationships for sustainability (*cf*. Kruger *et al.,* 2020).

3.4.5. ECOJUSTICE EDUCATION

It can be argued that one of the greatest challenges faced by mankind in the 21st century, is the state of our planet. This can be ascribed to the strained relationship between humans and the more-than-human (Horsthemke, 2019). This emphasises the importance of ecojustice education. Ecojustice education is considered to be crucial in attempting to restore the relationship(s) between humans and the more-than-human, and consequently also the degradation of the environment. One can also argue that ecojustice education stems from the notion that relationships are key to all life systems (*cf*. Martusewicz, 2018).

Ecojustice education consists of an approach that addresses "the need to revitalize the world's diversity of cultural commons, the need to pursue lifestyles that do not diminish the prospects of future generations, the need to respect the rights of nature, and understanding the cultural roots of the problem" (Bowers, 2017: 54). This, in other words, means that an ecojustice perspective is based on the view that cultural and environmental degradation are interconnected (*cf*. Martusewicz, 2018). Cultural values and hierarchical systems impact on the ways in which we as humans treat other living, non-living and non-human entities that form part of the natural world. What the next decades will look like in terms of environment degradation, greatly depends on this treatment (Martusewicz, 2018). Martusewicz and Edmundson (2005: 71) go on to explain that "to be human is to live engaged in a vast and complex system of life, and human well-being depends on learning how to protect it". It can be said that the interaction(s) between humans and the more-than-human have to be positive in order for either of the entities to thrive. Acknowledging that humans and the more-than-human are interrelated, and therefore also inseparable, forms the basis of an ecojustice perspective, and ecojustice education (*cf.* Martusewicz *et al*., 2015).

It can be said that ecojustice education has the ability to bring about positive change to the ways in which the more-than-human is perceived. This is done by examining the deep-rooted cultural issues that affect the relationship(s) between humans and the more-than-human, and contributing to the environmental issues that the world is

facing. As mankind is dependent on the more-than-human world for survival, it is crucial that the natural world be preserved. This could be done by restoring the relationship between humans and the more-than-human (*cf*. Kruger *et al.,* 2020). It can then also be said that ecojustice education is aimed at the "restoration of the cultural and environmental commons through re-establishing the interdependence of people on people, of people on other species and other ecosystems for survival and for the well-being of future generations" (Kruger *et al.,* 2020: 208). These aims centre on achieving certain outcomes from an ecojustice perspective. The first outcome pertains to teachings that recognise and analyse cultural assumptions that regard the natural world as inferior (Bolich-Wade, 2022). When such teachings address preconceived notions of the inferiority of the environment as compared to humans, changes in learner attitudes and behaviour towards the environment may occur. The second outcome of ecojustice education is that its teachings focus on identifying and revitalising the intergenerational practices and relationships that exists between diverse groups of people (Martusewicz & Schnakenberg, 2010). If teachings are reflective of cross-generational traditions and interactions, the relationships between different groups of people can be strengthened through ecojustice education.

Striving to achieve the outcomes of ecojustice education is significant, as its intention is to gain a deep understanding of different cultures and the earth's ecosystems, and in doing so also eliminating the tensions that exists between them (Kruger *et al.,* 2020). The tensions experienced by humans and the more-than human are evident from the present-day environmental issues that humanity faces. These issues may be eradicated when different cultures and ecosystems are better understood. This can be done by implementing ecojustice education, as the intention of ecojustice education is to build new relationships and to rebuild existing relationships in an attempt to ensure the survival of humanity and the natural world (*cf*. Bolich-Wade, 2022). If these outcomes are realised, it will give rise to living conditions that nurture the "interdependence of humans on other people, on other species and on other ecosystems" (Kruger *et al*., 2020: 208). Realising the outcomes of ecojustice education is therefore conducive to the peaceful co-existence between humans and the more-than-human.

Ecojustice education can also be seen as a framework used for thinking about the ethical responsibilities that we, as community members and educators, have towards

protecting the environment. It can therefore be said that ecojustice is a perspective that guides humans as to what is morally right and what is wrong in terms of their relationship to the environment. Framed within an ecojustice perspective, ecojustice education implies learning "to think differently about our relationships to each other and to the natural world" (Martusewicz *et al*., 2015: 10). Because ecojustice education allows individuals to view relationships differently, it allows humans to focus on the intrinsic value of the more-than-human, and therefore has the ability to take action against the degradation occurring within our natural systems (*cf*. Martusewicz *et al.,* 2015). Ecojustice education allows for issues associated with the degradation of our natural systems to be viewed in a critical, historical and socio-political way. Viewing the degradation of natural systems in this way allows learners to critically analyse environmental degradation, learn about where such degradation stem from, and determine the ways in social and political factors contribute to the degradation (cf. Bolich-Wade, 2022). By doing so, current generations may find common ground in the face of unsustainable situations. This is because an ecojustice education framework may help us understand the unintentional values we hold that threaten equity, sustainability, and diversity (Martusewicz, 2018).

In addition, ecojustice education allows for practices associated with injustices to be identified and acted upon. It further has the ability to critically and ethically examine the connections that exists between ecological degradation and unwarranted social suffering. It is believed that using such knowledge as a framework for education, could create a shift in education, where an environment is created where sustainable as well as socially just teaching and learning can take place (Leal Filho, Raath, Lazzarani, Vargas, de Souza, Anholon, Quelhas, Haddad, Klavins & Orlovic, 2018). It can further be said that ecojustice education has the ability to educate individuals on the environmental and cultural commons responsible for sustaining all life on Earth (Dentith *et al.,* 2014). An ecojustice education framework can assist in uncovering commonalities regarding the unsustainable issues that mankind is faced with (Bolich-Wade, 2022). Ecojustice education can be described as a process that builds capacity while creating spaces for individuals that are both nurturing and challenging, to enable them to explore their creativity with regards to creating a sustainable life. The goal of ecojustice is to improve the quality of life, not only for humans, but also for the more-than-human (Irving, 2019). These goals can be achieved because of the ability of

ecojustice education to prepare learners for their role in society by promoting communities that are sustainable and democratic. It is therefore considered as a way to teach responsibility regarding learners' ethical obligations toward their communities (Martusewicz *et al.,* 2015). Ecojustice education is not only driven by attaining sustainability and democracy in communities, but it also calls for groups of organisms to live "in mutual relationships with each other" (Kruger *et al.,* 2020 p: 208). In order to create sustainable and democratic communities where healthy mutual relationships exist, community-based learning is imperative (Kruger *et al*., 2020). Community-based learning together with youth ecojustice education and adult ecojustice education are considered to be the central components of ecojustice education and are therefore discussed in the following section.

3.4.5.1. CENTRAL COMPONENTS OF ECOJUSTICE EDUCATION

The central components of ecojustice education include "youth ecojustice education, adult ecojustice education and community-based ecojustice education" (Bolich-Wade, 2022:19).

The first component of ecojustice education involves youth ecojustice education. Youth ecojustice education is a concept that refers to educating the youth on ecojustice, and this is mainly done at school level (*cf.* Bolich-Wade, 2022). In order to combat ecological challenges, an ecojustice education framework makes use of interdisciplinary teaching to educate the youth. This can be done by conducting research, doing experiments and participating in fieldwork (*cf*. Barton & Smith, 2000). Interdisciplinary teaching and learning is when learners are given the opportunity to learn from multiple disciplines, and it is done in an attempt to come up with new ways to think about existing problems and find solutions for them. An interdisciplinary approach to teaching and learning allows learners to work on issues that don't usually form part of the curriculum. This alters learning by encouraging learners to combine several points of view rather than accepting one teacher's explanations at face value (Barton & Smith, 2000). An interdisciplinary approach to teaching and learning involves combining "science with social, political, and economic concerns" (Paige, Lloyd & Smith*,* 2016: 263). It is recommended that science education must assume an increased interdisciplinary approach because of the fact that science application contains personal and cultural components (Paige *et al.,* 2016). Including ecojustice in science education can restore cultural and environmental commons, because of its

ability to renew relationships between people and between people, other species, and ecosystems. By implication, the renewal of these relationships has the ability to secure the welfare of future generations (Bolich-Wade, 2022; Kruger *et al.,* 2020). While youth ecojustice education is crucial in sustainability, the role of adult educators is also significant. Studies have found that one of the main barriers facing the youth pertaining to ecojustice, is a lack of teacher knowledge (Parker, 2016). The youth often do not feel confident to share their personal views on environmental issues with others, especially with those who do not share their opinions, or they simply do not see the point in having conversations that relate to the environment (Parker, 2016). The unwillingness of learners to participate in conversations, emphasises the important role that educators have in facilitating classroom discussions relating to the more-than-human. This is because classrooms are considered safe spaces where difficult conversations can be had. In a classroom, an educator not only has the ability to facilitate conversations regarding environmental issues, but also to initiate them. This is when informal learning takes place, which is an important aspect of ecojustice education as it can lead to the youth thinking differently about themselves and the more-than-human (*cf*. Parker, 2016).

The second component of ecojustice education relates to the education of adults. Adult ecojustice education is an evolving field that studies the various ways in which dominant views impact on human relationships with the more-than-human. Adult ecojustice education has come to the fore due to international attempts to enlighten adults on environmental issues (Dentith *et al.,* 2014). It is the responsibility of adult teachers to guide learners in gaining knowledge on ecologically sustainable practices that have the potential of strengthening communities (Bowers, 2017). According to Griswold (2017), “[a]dult education can serve as a catalyst for sustainability and ecojustice education”. Adults have the ability to draw from their own experiences and will generally be able to exemplify the ways in which unsustainable practices have developed over time. Adults can then use this experience to help educate the youth on sustainability (Griswold, 2017). It is imperative that teachers educate the youth on sustainable practices, even if it is in informal ways like having classroom discussions (*cf*. Griswold, 2017). Teachings on sustainability are more likely to happen informally because of the limited amount of time that is allocated for it in the curriculum. There is an expectation that teachers should integrate environmental content and themes into

traditional subjects, in an attempt to teach the youth about sustainable practices (*cf*. 2.4). These expectations emphasise the importance of adult ecojustice education. However, adult ecojustice education does not only refer to the formal training that adults or teachers receive. It also refers to the ability of adults to recognise the importance of biological and cultural diversity and act on that knowledge (Bolich-Wade, 2022). To be able to acknowledge biological diversity, teachers have to have a general knowledge of a variety of life forms that exist on Earth. This means that teachers have to be familiar with ecosystems as well as the ways in which evolutionary, ecological and cultural processes contribute to sustaining life (DBE, 2023). There are various ways in which adult ecojustice educators can have an impact on teaching (Bolich-Wade, 2022). Educators must firstly have a clear worldview, a specific vocabulary that reflects those views, and care about improving the relationship(s) between humans and the more-than-human world (*cf.* Griswold, 2017). But educators cannot internalise knowledge without having a personal connection to it. It is therefore important that teaching material is related to the teachers' own community (Griswold, 2017). Learners will also be able to draw on their own understanding of the cultural commons in their communities, which will strengthen their own ecojustice connections. This is because ecojustice connections are reinforced when they are built together with others from the same community (*cf*. Kruger *et al.,* 2020). Only when adults are able to associate with the cultural commons of others in their community will they be able to acknowledge the consumer tendencies that contribute to the degradation of the environment, and gain an interest in exploring the cultural skills that sustain ecosystems (Dentith & Thompson, 2017; Bowers, 2017). The opposite is also true. When a culture centres on consumerism, the bonds between the cultural and environmental commons are broken, leading to the disintegration of communities (Martusewicz *et al.,* 2015). There is a fear that the consumption of the earth's resources can become excessive, if cultures continue to focus on personal gain. The greater the need for personal gain, the greater the resource use and misuse. This not only leads to environmental damage, but also to the severing of the connection between cultural and environmental commons, which also contributes to community disintegration (*cf*. Martusewicz *et al*., 2015).

The third component of ecojustice education pertains to community-based ecojustice education (Bolich-Wade, 2022). Because ecojustice education aspires to creating

sustainable and democratic communities, where different entities live together in harmony, community-based learning is pivotal (Kruger *et al.,* 2020). Community-based learning is based on the view that no entities on Earth are able to escape our physical space, and that we gain experience through the places we cohabit. This experience allows us to construct an understanding of the world (Kruger *et al.,* 2020). When considering that no beings on Earth can escape the planet, it can be said that the areas in which we, as humans, live, impact on the ways in which we perceive the world (*cf.* Bolich-Wade, 2022). Community-based ecojustice education involves positive intersectional education which incorporates a variety of teaching methods in the classroom (Bolich-Wade, 2022). The aim of community-based ecojustice education is to expose individuals to "the experience of being human in connection with the others and the world of nature, and the responsibility to conserve and restore our shared environments for future generations" (Gruenewald, 2003: 6). This is done when individuals are able to recognise and confront the cultural assumptions that prompt social and ecological injustices (Kruger *et al.,* 2020). It can be said that cultural assumptions that are reflective of anthropocentric values, have a negative impact on communities and the environment. The opposite is also true if cultural assumptions are reflective of ecocentric values. This is because of the ability of ecocentrism to strengthen the connection(s) that exists between societies and the environment (*cf*. Lowenstein *et al*., 2010). As ecojustice is reflective of ecocentric values, it can thereby be argued that ecojustice has the ability to promote more-than-human communal relationships (*cf*. Kruger *et al.,* 2020).

Because community-based ecojustice education takes place within communities that are familiar to learners, it sensitises them to the competencies and dispositions required to help sustain their communities (Lowenstein *et al.,* 2010). As such, community-based ecojustice education enables individuals to identify the strengths found within cultural and environmental commons, and use those strengths to promote sustainable communities (Martusewicz & Schnakenberg, 2010). This is reflected in practice, as was seen in a case study done by Sperling and Bencze in 2015 when the youth were exposed to ecojustice education by making use of a food system curriculum and coupled it with a social inequalities analysis. The outcomes of this study indicated that the youth showed a significant understanding of scientific concepts and the importance of food resources and citizen participation within the

community (Sperling & Bencze, 2015). This can be ascribed to the integration of environmental and cultural concepts relevant to a specific community, that teachers and learners expanded on. Community-based ecojustice education provokes in-depth understanding of community-based problems and solutions, and therefore have the ability to bring about positive change in society (*cf*. Kruger *et al.,* 2020). It is however important to note that because people find themselves in different cosmologies, their worldviews and their relationship with the natural world will differ, and so too will their ecojustice perspective (*cf*. 3.5.1). This is because community-based ecojustice teaching and learning takes place in specific geographical and cultural contexts, and these contexts differ in terms of the cosmologies that individuals ascribe to. Differences in cultural and ecological interactions that exists between one's environment, culture and education are therefore complex and unique, and is largely determined by place (*cf.* Gruenewald, 2003). This comes as humans occupy different geographical areas of Earth. Different geographical areas represent different cultures, which affects a person's worldview and also their education (*cf.* 2.4). It is therefore thought that if social and environmental injustices occur in certain places, it can be rectified through community-based ecojustice education. Community-based ecojustice education is representative of specific issues that need to be addressed, and specific ways in which to address those issues (*cf*. Gruenewald, 2003). When implementing community-based ecojustice education, it can restore cultural and environmental commons because of its ability to help humans realise that they have the same responsibility towards nature as they do towards other people (*cf*. Thiele, 2013). This can cause teachers and learners to develop new ways of theorising and educating others on being more connected to the planet, with the intention of creating a "healthy, thriving planet that acknowledges the entangled relationship between humans and the more-than-human" (Malone & Truong 2017, 5). Because of the specific geographical and cultural contexts in which community-based ecojustice education occurs, the information that is exchanged during such a process is considered to make a significant impact on individuals, which may prompt changes in behaviour toward the environment (*cf.* Gruenewald, 2003).

From the view that all entities on Earth are interconnected, it can be said that ecojustice education challenges anthropocentrism by demonstrating that teaching and learning can build the relationship(s) between humans and the more-than-human (*cf*.

Kruger *et al.,* 2020). By implication, ecojustice education equips humans to better their relationship(s) with the more-than-human. In doing so, living, non-living and non-human entities will be able to prosper. This will also positively impact on the environment, and maybe even halt environmental degradation, which will allow these entities to prosper even more (*cf.* Paige *et al.,* 2016). An ecojustice education framework helps people to find common ground pertaining to unsustainable issues that the present generation is faced with (Bolich-Wade, 2022). An ecojustice education framework develops a person's perspective, which allows them to consider the ethical responsibility they have toward the more-than-human, as well as gain an understanding of the consequences of injustices being committed against the more-than-human (*cf*. Martusewicz, 2018).

In addition to finding common ground in unsustainable issues, an ecojustice education framework also allows us, as humans, to recognise ways in which we unconsciously undermine diversity, sustainability and equity by the value we ascribe to the more-than-human (*cf*. Bolich-Wade, 2022). This is done by changing the ways in which humans think about the more-than-human.

3.4.6. FRAMEWORK FOR ECOJUSTICE EDUCATION

In this section, two different frameworks for ecojustice education are discussed, namely an ethical and political framework and a framework based on Earth democracies. To bring about change in the thought process of humans and cultivate an ecojustice perspective, Martusewicz and Edmundson (2005) suggest that an ethical and political framework be established.

3.4.6.1. ETHICAL AND POLITICAL FRAMEWORK FOR ECOJUSTICE EDUCATION

The ethical and political framework of ecojustice education centres on the notion that the more-than-human is equal to humans and should be treated as such. The expectation then exists that in acknowledging this equality, the relationship(s) between humans and the more-than-human world can improve and so too, the current environmental problems that the world is faced with (*cf.* Washington et al., 2018).
Based on the work of Washington *et al.* (2018) and Franks, Booker and Roe (2018), an ecojustice framework consists of three dimensions, namely recognition, procedure, and distribution. Recognition in ecojustice acknowledges that nature has its own interests. It concedes that populations, species, and ecosystems are concerned with

“maintaining and regenerating their vital cycles, structures, functions and processes in evolution” (Washington *et al*., 2018: 372). By implication, conservation is considered to be a process between nature and people, where justice is attained for both parties. Conservation can then occur because of the ability of humans to not only recognise the injustices committed against the more-than-human, but also the intrinsic value it holds (Rea & Munns Jr, 2017). The procedure aspect of ecojustice suggests that nature be involved in decision-making as well as dispute resolution processes (Washington *et al.,* 2018). However, because of the impracticality of such a suggestion, Gray and Curry (2016) propose that human guardians be appointed by non-governmental organisations to act in nature’s best interest. Ideally these guardians will be available to fulfil proxy voting roles and appeal court rulings (Gray & Curry, 2016). This suggestion by Gray and Curry (2016) implies that organisations be given the right to act on behalf of the more-than-human, as if it were a person. This means that an organisation would have the right to make or oppose decisions as a representative of the more-than-human. In ecojustice, distribution means to award nature its share of benefits based on the cost of suffering it endures because of human activity, its intrinsic value and rights, and its need to thrive (Washington *et al.,* 2018). Distribution suggests that because the more-than-human has to endure injustices committed by humans, humans then in turn have to promote conservation, restoration, and sustainability.

An ethical and political framework for ecojustice education can be established by recognising that human cultures are entrenched in larger life systems, and therefore also dependent on those systems. Keeping in mind that ecojustice considers all human cultures to be rooted in and depended on various life systems, Martusewicz and Edmundson (2005) emphasise some interrelated concepts that must be addressed by teachers if ecojustice is to be promoted in schools. The first is to understand that ecosystems are crucial to human life, and that modern thinking often undermines these systems. It is further important to recognise and eliminate environmental racism. An example of environmental racism is dumping waste in communities where people are socially and/or economically marginalised. It is also imperative that Western patterns of resource consumption are addressed in school curricula. Here, Martusewicz and Edmundson (2005) specifically refer to teachings regarding the exploitation of the natural resources of Southern hemisphere countries

by countries in the Northern hemisphere. Furthermore, it is important to understand what environmental and cultural commons are, as knowledge on these commons can promote their preservation. When learners understand the concept of environmental and cultural commons, they will also be able to recognise the importance of healthy relationships between humans and the more-than-human. With this recognition also comes the recognition that industrialising forces have the ability to undermine these relationships.

3.4.6.2. EARTH DEMOCRACIES

The second framework pertaining to ecojustice, involves Earth democracies. Earth democracy is a movement that focus on humans and nature rather than commerce and profits (*cf*. Martusewicz & Edmundson, 2005). Earth democracies include recognising, protecting and establishing the democracy of the earth. Earth democracies can therefore be regarded as a decision making-practices that aims to renew resources like water, soil, air and plant and animal life, in natural systems (Martusewicz & Edmundson, 2005). The renewal of elements like water, soil plant and animal life are imperative, not only for the prosperity of the environment, but also to create fairness within communities. In many traditional and indigenous cultures, like the Khoisan who live in southern Africa, spirituality is considered to be a part of implementing Earth democracy in an individual's life. This spirituality creates communities that are sustainable and can live in harmony in and with their environments (*cf*. Martusewicz & Edmundson, 2005).

Teaching Earth democracies is imperative, so that learners can understand why it is crucial to renew natural resources, and also to learn about the ways in which this can be done (*cf.* Martusewicz & Edmundson, 2005). It is said that ecojustice education can teach learners about Earth democracies (*cf*. Mueller, 2011). The ways in which ecojustice education stresses the significance of community service learning, also educate learners on Earth democracies. This teaches the youth about community revitalisation in ways that propose both alternatives and solutions, in order to address social and ecological issues facing modern communities (Glasson, 2011). Because modern communities often have predominant anthropocentric worldviews, it negatively impacts on the youth and their relationship with the more-than-human (*cf*. 2.2.1). As a result, the youth are unaware of the impact that their actions have on the environment. This can be ascribed to the youth not being educated regarding Earth

democracies. In order to intervene and change the ecological perceptions of the youth, ecojustice education is crucial. Ecojustice education creates opportunities for the implementation of youth programs in school curricula, or for existing youth programs to be strengthened (Mueller, 2009). Youth programs and youth leadership programs have the ability to expand the worldview of learners in ways that allow them to "pay more attention and make nurturing choices about what narratives should be emphasized" and are important in their lives (Mueller, 2009 1006). Educating the youth on Earth democracies will provide them with opportunities to reflect on issues pertaining to the environment, and they will be able to determine which actions should be taken to bring about change(s) to the environment. This is because ecojustice can become the tool to take action within local contexts in terms of discussing and addressing deep-rooted issues that directly or indirectly affect societies around the world (Parker, 2016). However, because worldviews determine individuals' perceptions, as well as the narratives that they use when discussing and addressing such issues, it is important to know whether a person's worldview is anthropocentric or ecocentric in nature (*cf*. 2.2.1; 3.1). In other words, how do they perceive themselves in relation to the environment. It is therefore important that teaching and learning reflect ecocentric values, rather than anthropocentric values.

3.5. SUMMARY

The aim of this chapter was to determine what a shift from an anthropocentric worldview to an ecocentric worldview would mean for education (*cf*. 3.1). In this chapter, I found that ecocentrism, together with ecojustice, have the ability to create a shift from an anthropocentrism worldview to an ecocentric worldview in education. This is because ecocentrism allows for humans to review the relationship(s) they have with the more-than-human, as well as the consequences of those relationships. This can be ascribed to the origins of ecocentrism, that regard nature as also being deserving of the same recognition and respect as humans. From an ecocentric point of view, this is because nature is considered to be morally equal to humans (*cf*. 3.2). The moral value that the more-than-human have, can be reproduced by incorporating environmental sustainability in school curricula that is based on scientific evidence. Knowledge can equip learners with a basic knowledge of ecology, ecological systems and the ecological issues that affect the more-than-human. By empowering learners with such knowledge, it also encourages a better appreciation for the more-than-

human. Because education is considered to be a driving force in changing people's worldviews, teaching environmental and sustainability ethics and education for sustainable development is crucial for creating a shift from worldviews that are anthropocentric in nature, to worldviews that are ecocentric in nature (*cf*. 3.3). In order to solidify changes in human attitudes and behaviour towards the environment, knowledge on ecojustice and the implementation of ecojustice education is also needed. This is because ecojustice pursues justice for the environment and culture, and allows humans to think differently about their relationship(s) with each other and also their relationship(s) with the more-than-human. By viewing the world from an ecojustice perspective, people are able to respond to the degradation of natural systems, which means that the environmental issues that the world is faced with, can be addressed (*cf*. 3.4). When incorporating ecojustice in education, learners are educated regarding the environmental and cultural commons that are responsible for sustaining life on Earth. Knowledge about environmental and cultural commons not only has the ability to improve the quality of life of humans, but also that of the more-than-human. Because ecojustice education advocates for communities to become more sustainable and democratic, it prepares the youth for their role in society. Ecojustice education therefore teaches the youth to be more responsible in terms of their ethical obligations towards their communities (*cf*. 3.4.1). Youth ecojustice education is one of the central components of ecojustice education. It involves teaching interdisciplinary concepts in schools. If these concepts combine science with social, political and economic concerns, ecological challenges can be tackled. Another central component of ecojustice education relates to adult ecojustice education. In the context of this study, adult ecojustice education refers to the ability of teachers to draw from their own experiences in order to help learners to identify and acknowledge ecologically unsustainable and sustainable practices, in an attempt to promote sustainability. Community-based ecojustice education was the last component of ecojustice noted in this study. Community-based ecojustice education is when teaching and learning takes place in, or relate to, communities with which learners are familiar. This sensitises learners to the competencies and attitudes needed to sustain their communities (*cf*. 3.4.1). It is therefore my contention that a shift from an anthropocentric worldview to an ecocentric worldview is possible through the implementation of ecojustice education.

As ecojustice centres on the constructive interaction between humans and the more-than-human, it relates closely to communitarianism (*cf*. 3.4.3). The following chapter will elaborate on communitarianism and the concepts related to it.

CHAPTER 4: WAYS IN WHICH ECOJUSTICE AND ECOJUSTICE EDUCATION CAN BE RECONCEPTUALISED FOR NURTURING MORE-THAN-HUMAN COMMUNAL RELATIONSHIPS

4.1. INTRODUCTION

In the previous chapter, it was stated that for a shift from an anthropocentric worldview to an ecocentric worldview to occur, an ecojustice approach to education needs to be taken (*cf*. 3.5). The implication of such a shift refers to people's perceptions of their relationship(s) with the more-than-human. From an anthropocentric worldview, humans perceive themselves and their needs as superior to the needs of other entities on Earth, whereas an ecocentric worldview acknowledges that humans and the more-than-human have equal value and should be treated as such (*cf.* 3.3). The research presented in the previous chapters (*cf*. 3.2; 3.3) affirms the importance of ecocentrism, as well as the notion of community and its influence on human relationships with the more-than-human (*cf*. 3.4).

The aim of this chapter is therefore to explore the different ways in which ecojustice and ecojustice education could be reconceptualised in order to nurture more-than-human communal relationships (*cf*. 1.4.3). This will be done through the conceptualisation of communitarianism and African communitarianism, and establishing the effect that African communitarianism could have on education. In reconsidering the relevance of ecojustice education in the South African educational system, the focus will be on the ability of African thought to emphasise the interconnectedness of all things in nature (Behrens, 2013).

4.2. CONCEPTUALISATION OF COMMUNITARIANISM

As an individual's understanding of, and relationship with, the natural world is affected by the communities they find themselves in, communitarianism is key to understanding the relationship between humans and the more-than-human (*cf*. Kruger et al., 2020). Communitarianism is a philosophy that centres on the relationship between the individual and the community (Schaber & Anwander, 2002). It is also based on the notion that the actions and ambitions of individuals are reflective of that of their

communities (Waghid, 2014). From a communitarianism point of view, individuals and the community should be jointly “engaged in a contemporaneous formation” (Eze, 2008 386). By implication, individuals and communities are dependent on one another to thrive. If communities thrive, it is likely that the individuals in those communities will thrive, and if individuals thrive, it is likely due to the fact that their communities thrive (*cf*. Eze, 2008).

It can therefore be said that communitarianism is the idea that humans are able to prosper if, and when, they form part of a community (Schaber & Anwander, 2002). The community therefore has a central role to play in communitarianism (Gideon, 2019). Community is defined as “a group of persons linked by interpersonal bonds, which are not necessarily biological [but those] who consider themselves primarily as members of a group who share common goals, values, and interests” (Gideon, 2019: 5). According to Schaber and Anwander (2002), a community is characterised by certain features. These features pertain to members of a community who are united through their shared goals and values, who value relationships, and who consider their membership to be a part of their personal identity. From a communitarianism perspective, community is defined, in a philosophical sense, as an array of interactions between a community of people who share a specific geographical location, interests, or history (Avineri & de-Shalit, 1992). A community is, in other words, considered to be a collection of interactions between a group of individuals who share a common history, location, or set of interests.

Communitarianism is also thought to be one of the ways in which social controversies, like poverty, inequality, exploitation and climate change, can be addressed. This is because communitarianism fosters communal harmony by diverting the focus from the individual and the individual’s needs to the needs of the community (Chang, 2022). Communitarianism therefore challenges individualism and actions that do not prioritise the needs of the community as a whole (*cf*. Avineri & de-Shalit, 1992). This is because communitarianism focuses on the “moral supremacy of the common good – the good of the community as a whole” (Ansah & Mensah, 2018: 63). It is therefore said that communitarianism focuses on what is beneficial for the majority of the members of a certain community.

Communitarianism is further thought to be a philosophy that emphasises the importance of the connections that exist between individuals and the community. This philosophy centres on the view that an individual's social identity, as well as their personality, is shaped by community relationships (Avineri & de-Shalit, 1992). This can be ascribed to the fact that we, as humans are "born into, and embedded in a particular social context, and depend on our constitutive attachments to family or community or nation or people, for the formation of our personalities" (Chang, 2022: 121). From a communitarian view, all individuals have an unchosen attachment to a specific community, because all humans are born into a specific social context that contributes to their social identity. It can therefore be said that one's social identity is shaped by one's communal attachments (*cf*. Chang, 2022).

It seems that one of the most significant functions of communitarianism is to construct and maintain meaningful relationships. These relationships then allow for the creation of shared understanding and social communities. It can therefore be said that communitarianism represents shared understandings within societies, it promotes communal solidarity, and therefore also the relationship(s) between humans and the more-than-human (*cf*. Van Leeuwen, 2015). Bell (1993: 24-25) describes communitarianism as a:

> perspective on ethics and political philosophy that emphasises the psycho-social and ethical importance of belonging to communities, and which hold that the possibilities for justifying ethical judgements are determined by the fact that ethical reasoning must proceed within the context of a community's traditions and cultural understanding.

This, in other words, means that communitarianism is a perspective that takes into account the context of a community's traditions, and has a cultural understanding of a specific community when passing ethical judgement. Because a community consists of individuals who share interpersonal bonds, communitarianism regards human actions and aspirations as an extension of the communities that individuals are part of. This implies that the well-being of humans and their communities are interwoven (*cf*. Eze, 2008; Gideon, 2019). It can therefore be said that communitarianism not only focuses on the connection(s) that exists between an individual and a community, but

it also considers the individual and the community to be equally important (Waghid, 2002).

In order for positive connections to exist between humans and the community, creating conditions where humans and communities can flourish is imperative and largely dependent on the establishment, maintenance, and advancement of social relations (Kruger *et al.,* 2020). Social relations refer to the voluntary or involuntary interpersonal relationships that exist between individuals within a group or between individuals and groups. These groups can differ in terms of nationality, language, culture, race, gender, religion, and economic class (Zahle, 2003). In order to establish affirmative social relationships, it is important to recognise that every individual within the community has "a legitimate voice that should be heard" (Waghid 2014, 21). This implies that mutual respect amongst individuals and individuals from different social groups is possible, if people are willing to listen to one another and enter into dialogue (*cf.* Kruger *et al*., 2020). However, mutual understanding and respect are often hindered because of the biases of individuals toward the community and the common good (Waghid, 2014). This occurs when the concept of communitarianism is misunderstood, and individuals believe that communitarianism means to forsake one's own individual interests for the sake of the well-being of the community (*cf*. Waghid, 2014). It is therefore important to note that being communitarian by nature, does not disregard individualism, and communitarian practice does not take place at the expense of the individual (Alford, 2005). With that said, communitarian actions "remain contingent and socially situated and thus interwoven with her community" (Kruger *et al.,* 2020, 210). Communitarian actions are, by implication, reflective of community-focused behaviours that are influenced by the social contexts in which people find themselves. It can therefore be said that members of a community can be regarded as communal beings (*cf*. Gyekye, 1992).

Communitarianism allows societies to adapt to internal changes as well as environmental conditions in order to maintain an equilibrium between human rights and the common good (Etzioni, 2014). Because societies differ, so too will the point at which such an equilibrium is reached. There is, in other words, no one specific benchmark in societies to determine at which point the perfect balance exists between individual rights and the common good (*cf*. Etzioni, 2014). Because cultural and

historical contexts within societies vary over time, so too will the balance that exists between the rights and responsibilities of the individual and doing what is considered to be best for the common good (*cf.* Etzioni, 2014). It can therefore be said that the balance between the needs of the individual and the needs of the community will change as contextual factors change. From a communitarian perspective, achieving the common good always has to outweigh the needs of the individual. However, the degree to which the common good can be achieved, is dependent on the degree to which an individual is able to contribute to it (Schaber & Anwander, 2002).

Communitarianism does not promote a particular set of principles that determines a standard for justice. Instead, it focuses on the internal good. The internal good refers to positive norms and values that are emulated in practices, interactions, and institutions (Van Leeuwen, 2015). The internal good means that positive values are reflected in behaviours, relationships and organisations. This includes human behaviour towards, and relationship(s) with, one another and the more-than-human. It can therefore be said that communitarianism not only refers to the interconnectedness between humans and the community, but also to doing good to all other entities found in the community, including those entities that are non-human. Even though communitarianism is primarily centred on the social connections between humans, it also includes the more-than-human (Samuel & Leonard, 2018). This can be ascribed to the norms and values of communitarianism that positively impact on behaviours and relationships, which is not only limited to humans, but is also extended to the more-than-human. Communitarianism is therefore considered to be a view of the world that positively influences the way in which people interact with one other and with their surroundings. By implication, communitarianism results in positive interactions between humans and the more-than-human, which are conducive to a peaceful co-existence (*cf*. Samuel & Leonard, 2018).

The above discussion of communitarianism serves as a basis for elaborating on African communitarianism and its ability to promote more-than-human communal relationships.

4.3. CONCEPTUALISATION OF AFRICAN COMMUNITARIANISM

African communitarianism is thought to be a philosophy that is a prominent feature in African countries, especially in sub-Saharan Africa (Metz, 2019). It is said that African

communitarianism resulted from Africans opposing Western values and practices meant to oppress the African people. In addition to African communitarianism being a decolonising approach against oppression, it is also thought of as a communitarian ethos that forms part of the lived experience of Africans (Matolino, 2018). It can therefore be said that African communitarianism is expressed in the lifestyle of those who form a part of African communities. This notion is based on the understanding that African communities are communal in nature (Chemhuru, 2018). One of the main goals of communitarianism is for communities to prosper. In order to achieve this goal, harmony must be maintained within a community. Harmony can be maintained in communities when relevant traditions are perpetuated in a rational way. To ensure that harmony is maintained in communities and eco-communities, is an essential human interest (*cf.* Ikuenobe, 2006). According to Eze (2017: 627), "the earth, trees, animals, spirits, humans, animate and inanimate things together constitute an eco-community". According to Kruger *et al.* (2020: 213), African eco-communitarianism acknowledges the "intrinsic worth, interconnectedness, and interdependence of all species, people and ecosystems, by not giving precedence to the individual, the communal or the environment". From an eco-communitarian position, interrelatedness implies that an acceptance of interdependence exists, and so too does a peaceful coexistence between humans and all other entities (Tangwa, 2004). From an eco-humanist perspective, interrelatedness involves the acknowledgement of humanity's dependence on positive relationships and a harmonious balance between "human beings, animals, biological life, non-biological life, spirits, forces and other inanimate elements that make up our environment" (Eze, 2017: 629). Even though the definition of interrelatedness differs slightly between an eco-communitarian and an eco-humanist perspective, it is apparent that humans and all other entities that exist, are interrelated. This view is strengthened by the concept of communitarianism (*cf.* 4.1).

As this study is set in the African context, and the values associated with African communitarianism play a crucial role in the study, it is important to discuss what African communitarianism entails. The components of African communitarianism also form the basis of an African environmental outlook (Watadza, 2016). An African environmental outlook is distinctive from other environmental outlooks because of the indigenous knowledge systems found within African traditional religion and morality. African knowledge is based on a culture that is relational, and which centres on the

spirit of community and harmony. It can therefore also be said that the notion of community and harmonious relationships are deeply rooted in cultural values (Kaya & Seleti, 2013). This indigenous knowledge also has the ability to provide sufficient solutions to environmental issues, specifically pertaining to Africa (Watadza, 2016). It can be argued that the most significant ecological issues found in Africa includes deforestation, water and air pollution, and the loss of biodiversity. Deforestation is one of the primary issues threatening the global ecological equilibrium. The clearing of forest cover for timber and agricultural land has resulted in soil erosion, climate change, and decreasing rainfall (*cf.* 2.3). As African economies grow, so too does the amount of air pollution. Increased air pollution in Africa can be ascribed to the expansion of oil and gas industries. Water pollution, that stems from poor hygiene and inadequate sanitation, poses an imminent threat for Africans as it often results in serious illness and/or death (*cf.* 3.4.1). A decline in the loss of biodiversity in Africa can be attributed to rapid population growth, extensive farming, urbanisation, and the development of infrastructure (*cf*. 2.3). The damaging effects of such ecological issues continue to prompt urgent calls for action to be taken because of the negative impact it has on the living conditions of people on the African continent (Mwambazambi, 2010). As harmonious relationships are considered to form part of the cultural values of African communitarianism, it can be said that African communitarianism can restore the tumultuous relationship that exists between humans and the more-than-human in an attempt to address ecological issues. It can, in other words, be said that African communitarianism is considered to be a response to African environmental problems (Watadza, 2016).

African communitarianism is also considered to be a traditional African value that is deeply rooted in African life (*cf.* 1.6.3.1). This value is based on religious ideologies, the concept of morality, common good and goodwill, *ubuntu* and *ukama,* and the interdependent relationships between humans and nature.

Religious ideologies are considered to be key in better understanding African communitarianism. This is because traditional African religion cultivates a culture of environmental consciousness (Watadza, 2016). It can be argued that traditional African religion is based on the notion that God, spirits, humans and the non-human live in unity, and that if this unity is broken, it influences all modes of existence (Mbiti, 1970). A profound connection therefore exists between God, the living, the deceased,

and the environment in traditional African societies. The connectedness between these entities form part of the foundation for African environmental ethics (Watadza, 2016). According to Mkenda (2010), those from traditional African societies often characterise people based on their relationships with nature and others. This stems from the expectation that people from traditional African societies mostly perform good acts. Good acts are considered to be "those that keep harmony and peace in the web of relationship within the community", and are based on the belief that "[o]ne has to co-exist peacefully with other people, other living beings and inanimate beings within his or her environment" (Mkenda, 2010: 4). It can therefore be said that traditional African thought is associated with a good moral standing. Here one's moral standing, also known as morality, is greatly valued, and it determines the quality of the relationship that one has with the community (Watadza, 2016). The common good refers to all things that benefit an entire group. The common good refers to anything that can benefit and be shared by the members of the community (Gyekye, 1992). It can, in other words, be said that the common good refers to all the things that have the ability to benefit an entire group, rather than just an individual. In terms of goodwill, Metz (2015) considers goodwill to consist of actions that are good, or doing the right thing(s). Doing things that are good is then thought to promote a shared identity among people. The opposite is also true, and an act is considered to be wrong if it fails to promote a shared identity among people, or encourages ill will (Metz, 2007).

Communitarianism is also strongly associated with concepts like *ubuntu* and *ukama*. Murove (2016 defines *ubuntu* as humanness, and *ukama* as relatedness. *Ubuntu* refers to a "shared humanity and interrelatedness" (Kruger *et al.* 2020 210), whereas *ukama* centres on the interconnectivity of humans with their environment, ancestors, and God (*cf.* 1.6.3.1). *Ubuntu* is thought to be a form of *ukama,* and is based on the assumption that "human interrelationships within society are a microcosm of the rationality within the universe" (Murove, 2016: 316). Both, *ubuntu* and *ukama* place great emphasis on these interrelationships, and it can therefore be said that the relationships that exist amongst humans and the relationships that exists between humans and the more-than-human, form the basis of African environmental ethics. This is because African environmental ethics is founded on respect (Watadza, 2016). Those who personify *ubuntu* and *ukama* therefore approach nature with respect and integrity (*cf.* Murove, 2016). For that reason*, ubuntu* can also be thought of as an

embodiment of how humans should interact with other humans and the more-than-human (Le Grange, 2015). Morality is one of the aspects of *ubuntu* that considers the only way to cultivate one's humanness is through the ability to positively relate to others (Metz & Gaie, 2010). According to Metz and Gaie (2010: 331), to be human "is to affirm one's humanity by recognising the humanity of others and, on that basis, establish humane relations with them". This statement implies that humans are not able to realise their humanness without acknowledging others' humanness. It can further be argued that one cannot truly understand oneself in isolation from others. This encompasses the communitarian nature of *ubuntu*. It is because of the communitarian nature of *ubuntu* that environmentalism is ingrained in African thought (*cf*. Metz & Gaie, 2010). From a traditional African view, *ubuntu* not only advocates for environmental welfare, but also for the welfare of humans, animals and the inanimate (Watadza, 2016). In doing so, *ubuntu's* values of caring encourages humans to develop non-exploitive attitudes toward the environment, which may lead to more sustainable practices and improved environmental conditions (*cf.* Watadza, 2016).

Some academics believe African philosophy to be inherently anthropocentric, because moral consideration is only extended to humans. However, these arguments are based on evolving African theories that are largely based on discourses found in the Western world (Horsthemke, 2015). Eze (2017) argues that the ways in which a community is conceptualised in the African context, must be taken into consideration when presenting such arguments. It is said that a community is not understood, in the African context, as comprising only of humans. A community is considered to consists of beings with intelligence, and beings without intelligence (Eze, 2017). Within the African context, the beings that form part of a community are interconnected and equal, with no distinction between superior or inferior beings. From an African communitarian view, moral consideration pertains to humans and is extended to the more-than-human (Kruger *et al*., 2020). By implication, African communitarianism can therefore not be regarded as anthropocentric.

It can be said that within the African context, a community is not considered to only consist of humans, but rather "a fluid habitation of interactive forces, beings, elements and animate and inanimate matters of the environment" (Eze, 2017 625). Communities therefore consist of beings with intelligence, like humans, and those without

intelligence, like objects. These beings cannot function separately and are interrelated with no being superior or inferior to the other (*cf.* Kruger *et al.* 2020). But within the Western philosophical context, the position of humans in relation to the more-than-human is conceptualised in different ways (*cf*. Eze, 2017). In this case, humans hold moral rights over the non-human because of its inferiority and benefit to humans. This implies that non-human entities can be exploited if it is for the benefit of mankind (Eze, 2017). It can, however, be argued that even though humans and the non-human, like animals, constantly interact with one another, animals cannot be considered to be members of the moral community because of their inability to acknowledge mutual moral obligations (Menkiti, 2017). In contrast to the view of Menkiti (2017), Kruger *et al.* (2020) propose another position in which all biological entities have value. It is further noted that from an ecocentric position, living entities also include soil, water, plants, and animals. From the position of an animal rights theory, and considering the relationship(s) between humans, the non-human, and the environment, it can be argued that moral value also extends to sentient entities (Horsthemke, 2015). According to Behrens (2013), most entities can hold moral value because of the different themes found within moral considerability. Within African environmental ethic, all things are thought to be interconnected and dependent on one another (*cf.* Behrens, 2013). African communitarian philosophy emphasises the interconnectedness between humans and the natural environment. It is said that "all natural forces depend on each other, so that human beings can live in harmony only in and with the whole of nature" (Bujo, 1998. 22-23). Behrens (2013) affirms this interconnectedness by stating that humans are a part of nature and cannot be separated from it. This is because human well-being and survival is dependent on nature, as it provides mankind with air, water and food which are imperative for life on Earth (*cf.* Behrens, 2013).

Some academics consider African communitarian philosophy to encompass ontological, moral, and political philosophies that represent the African way of life. It also forms the foundation of an African identity, and allows for different African cultures to be distinguished from non-African cultures (Imafidon, 2021). In order to better understand this view, one can draw on Mbiti's explanation of African communitarianism:

> [o]nly in terms of other people does the individual become conscious of his own being, his own duties, his privileges and responsibilities towards himself and towards other people. When he suffers, he does not suffer alone but with the corporate group; when he rejoices, he rejoices not alone but with his kinsmen, his neighbours and relatives whether dead or alive. Whatever happens to the individual happens to the whole group and whatever happens to the whole group happens to the individual. The individual can only say: "I am, because we are; and since we are, therefore I am." This is the cardinal point in the understanding of the African view of man (1969: 08–109).

Based on the description of Mbiti (1970), it is clear that African communitarianism views man to have an inseparable bond with his/her community. And because of this bond, humans and communities are involuntarily impacted by one another. It can also be said that African communitarianism is based on the premise that humans cannot choose whether they want to enter into a human community or not. Community life is thereby not optional to the individual. Humans are also considered to be cultural beings. This can be ascribed to the natural inkling of humans to want relationships with others, and the notion that humans cannot live in isolation from other entities (Gyekye, 1992).

African communitarianism, from an ontological view, constitutes an African understanding of reality, as well as the ways in which individuals are responsible for sustaining communal harmony and well-being. Here it is important to note that communal well-being not only pertains to humans, but also to all other living and non-living entities (Imafidon, 2021). In the traditional African view, it can be said that humans form part of reality, and this reality comprises of a variety of life forces and natural elements. Reality therefore aims to sustain a balance between the different natural elements and life forces that exists on Earth. Because this reality is a continuum, it is thought that no conceptual or interactive breech exists between humans, the community and the world (Ikuenobe, 2006). It can therefore be said that from a traditional African view, living, non-living and non-human entities are all interrelated. This is because these entities continuously interact with one another, in some way or another. According to Ikuenobe (2006: 65), "the goal of maintaining harmony for the human good and well-being is the foundation for communalism, which

implies the need to impose social responsibilities on people in order to rationally perpetuate the relevant traditions and maintain harmony". It can therefore be said that maintaining harmony within a community is paramount for the welfare of humans.

Morality also forms an integral part of African communitarian philosophy, and it considers the pursuit of human welfare to be "the moral centre of communalism and the moral conception of personhood in African traditions" (Ikuenobe, 2006: 65). This is because of the intention of communalism that people act in ways that enrich their own interests, but always keeping the goals of human welfare and the natural harmony of communities in mind (*cf*. Ikuenobe, 2006). An emphasis is therefore placed on the actions taken within African communities to preserve and promote order in communal structures. This is a way for humans and the non-human to gain relevance in these communities, and also ensure their survival (Imafidon, 2021). The educational implications of African communitarianism, including concepts like *ubuntu* and *ukama*, must be accounted for in thinking about education towards the nurturing of harmonious more-than-human communal relationships (Metz, 2019). In drawing on *ubuntu* and *ukama*, ecojustice education is conceptualised as a moral obligation towards fellow human beings and the environment (Chibvondogze, 2016). This obligation is underscored by the aim of African communitarianism to strengthen the relationship of interdependence between humans, the community, and the more-than-human world (Samuel & Leonard, 2018). It can be said that the relationship between humans and the more-than-human world is strengthened when humans can peacefully co-exist with one another and the environment (*cf*. Waghid, 2014). The ability of humans, communities and the more-than-human to peacefully co-exist is crucial when considering that they are intrinsically related to each another. This is because we as humans are dependent on the natural landscape in which our daily lives take place. Humans rely entirely on the more-than-human world for basic, life-sustaining services such as clean air and water, a stable climate, and food, yet the actions of humans are having an increasingly dramatic and negative impact on animals and ecosystems. This not only threatens the survival of animals and ecosystems, but also the survival of mankind (Chu & Karr, 2017).

In addition to the ontological and moral view of African communitarianism, it can also be said that African communitarianism is reflective of political philosophy. This means

that African communitarian ethics, if applied in the public sector, for example, can be used to help resolve political and governance issues on the African continent (*cf*. Imafidon, 2021).

It can further be said that African communitarianism is equipped to be a philosophical foundation for education, as well a consensual approach to attending to the problems of the African continent (Enslin & Horsthemke, 2016). Proceeding from the view that cultures across the world are different, and that these differences determine and reflect the worldviews of those who form part of that specific culture, it can be said that these views also have different effects on the environment (*cf.* 2.4). The ways in which the environment, culture and education relates to one another is therefore unique and diverse in terms of the cultural and ecological interactions they produce (Gruenewald, 2003). It can then be assumed that the current ecological problems in the world, is cultural in nature (Behrens, 2013). Based on this assumption, philosophical consideration needs to be given to the ways in which this is expressed in the field of education, as well as the different ways in which sustainable and democratic communities can be built on the African continent (*cf*. Kruger *et al.,* 2020). The next section (*cf*. 4.4) will therefore offer a discussion on the ways in which ecojustice and ecojustice education can be reconceptualised for nurturing more-than-human communal relationships.

4.4. ECOJUSTICE AND ECOJUSTICE EDUCATION FOR NURTURING MORE-THAN-HUMAN COMMUNAL RELATIONSHIPS

In the previous section, communitarianism, and the ways in which it is expressed in African philosophy, were discussed. In this section, I used that knowledge (*cf*. 4.3) to determine what African communitarianism means in terms of the relationship between humans and the more-than human, and also in terms of ecojustice education (*cf.* 1.1).

When defending an African philosophy of education, it often stands in contrast to a Western philosophy of education (Metz, 2015; Waghid, 2014). Metz (2015) argues that a Western philosophy of education is more individualistic in nature, whereas an African philosophy of education is more communitarian. This is because Western education systems place great value on internal characteristics of the individual (Enslin & Horsthemke, 2016). Internal characteristics refer to qualities that are internal to

humans, and include “autonomy, rationality, intellectual virtues, self-development, self-esteem, pleasure, desires and work-related abilities” (Metz, 2015: 4). Emphasising the importance of internal properties in education has the ability to distance individuals from one another, and by implication strengthening individualism (*cf.* Enslin & Horsthemke, 2016). Academics like Metz (2015) argue that education systems in the West are individualistic because of aspects like school buildings, for example, that are allocated to professional teachers who convey propositional information by implementing a curriculum that focuses on written texts. Another aspect of individualism in education pertains specifically to assessment. Here, assessment occurs mainly through testing, and it aims to have learners qualify for a market where they contend for jobs. These educational practises are thought to be individualistic because it sets out to nurture the individual.

When comparing an African approach to education, to a Westernised approach to education, an African approach aims to empower communities by emphasising the importance of diversity and lived experiences. In doing so, it challenges the forms of universal knowledge found within Western education models (Higgs, 2003). Academics like Higgs (2003) suggest that a shift from a Western approach to education to an African approach to education will bring about changes in the ways that individuals see themselves in relation to their communities and the environment (Waghid, 2014). It appears that a Western approach to education stands opposed to an African approach to education in terms of its nature and its educational practices. Because of these significant differences, it is clear that education systems of the West tend to centre on the individual, whereas an African approach to education focuses on the importance of the community. This, by implication, means that a Western approach to education is anthropocentric in nature, in contrast to an African approach to education, which is more ecocentric in nature (*cf*. 2.2.4; 3.3).

A key component of Higgs’s argument surrounding the need for an African approach to education centres on the idea of *ubuntu* and humaneness (Waghid, 2014). According to Le Grange (2012: 7), *ubuntu* means that “each individual’s humanity is ideally expressed in relationship with others and in relationships individuality is truly expressed”. By implication, *ubuntu* is a view in which no one is regarded as a self-sufficient being in and of themselves. The existence of others is therefore a fundamental component to expressing oneself. When a person is able to recognise

and accept this notion, the communitarian imperative emerges (*cf*. Le Grange, 2012). It can be argued that *ubuntu* advocates for human interdependence. This means that the "relationship between a person and her/his community is reciprocal, interdependent and mutual[ly] beneficial" (Murove, 2016). It can therefore be said that *ubuntu* encourages people to understand the impact that a positive outlook towards one's community has on the community, as well as on oneself. Because of the interrelationship that exists between humans and their community, *ubuntu* is also considered to be a form of African humanism. African humanism is the ideology that enables the peaceful coexistence of all people, regardless of their race, nationality, culture, or beliefs (*cf.* Higgs, 2003). This can be ascribed to the potential of *ubuntu* to bring about "communal embeddedness and connectedness of a person to other persons" (Higgs, 2003: 13). And when *ubuntu* is viewed in such a way, it can also be said that it has the potential to cultivate "kindness, generosity, compassion, benevolence, courtesy and respect and concern for others" (Higgs, 2003: 14). I am of the opinion that cultivating these values can change the relationship between humans and the more-than-human. This is because the ways in which the more-than-human is treated, become more reflective of ecocentric values than anthropocentric values (*cf*. 3.2).

In African societies, the notion of *ukama* is also significant for promoting interrelationships. *Ukama* emphasises human interconnectedness in African communities (Ndofirepi & Shanyanana, 2016). *Ukama* not only advances human relatedness, but it also conveys the relatedness of all beings in cosmic life. Based on this understanding, *ukama* includes interdependence and intertwined ties between humans as well as with the larger ecological community (*cf.* Ndofirepi & Shanyanana, 2016). This is because indigenous African societies associate with animal species, plants, or other natural aspects, especially if an entity has a connection to the origin of their ethnic group. In this way, a relatedness to, and inseparable bond between humans and the more-than-human, is encouraged (Ikeke, 2015). Because *ukama* values the interrelatedness between humans and the more-than-human, it can be said that *ukama* is reflective of ecocentric values (Le Grange, 2012). When taking into consideration the positive contribution that *ukama* makes to communities, it can be said that *ukama* also has the potential to make an even greater impact on the

relationship between humans and the more-than-human, if it were to form part of an ecojustice education framework (*cf*. Kruger *et al*., 2020).

Keeping the notion of *ukama* in mind, a concept like totemism is also significant. Totemism depicts a close bond between people and plants and animals (known as totems), and as a result, people experience a sense of belonging, since they feel linked to the land, the past, and the present (Murove, 2016. Totemism is, in other words, strengthened through *ukama*, and vice versa. This is because of its depiction of the interconnection and interrelationship of all cosmic existence reflected in indigenous African communities. Because *ukama* preserves ideas and practices that promote respect for the planet and its people, it allows people to recognise that they are responsible for protecting and nurturing the earth, so that current and future generations can be sustained (Ikeke, 2015). Because *ukama* acknowledges the intimate relationship that exists between all entities on Earth, it serves as an ethical foundation for human, social, spiritual, and ecological cohesion (Murove, 2016). I therefore argue that *ukama,* as an African value, serves as a foundation for the unity between humans and the more-than-human. I also believe that the values upon which totemism and *ukama* are based, are similar to the outcomes that ecological, biological and environmental literacy aim to teach (*cf*. 2.5.2). Based on my knowledge of totemism and *ukama*, it is my view that ecological, biological and environmental literacy can be strengthened by also incorporating teachings on totemism and *ukama* in ecojustice education.

It is said that the values on which African philosophy, and also, *ubuntu* and *ukama* centres, are reflective of a humanist approach toward humans and the more-than-human. These values also then stand in contrast to the anthropocentric values of the West, that claim superiority over all other entities (*cf*. 2.2.2). This emphasises the importance of African philosophy, and incorporating African philosophy in education. Waghid (2014) notes that an African philosophy of education as a practice is reasonable, morally mature and deliberate. Keeping in mind the values embodied by *ubuntu*, educational practices can be interpreted from a communitarian perspective (*cf.* 4.3). The reasonableness of education relates to the justification of “what people offer as reasons for their beliefs, practices and institutions” (Waghid, 2014: 4). From an African philosophical view, education therefore has the ability to acknowledge that people’s beliefs and practices differ, and because of these differences, the ways in

which teaching and learning is experienced will differ from one individual to the next (*cf*. 3.3).

It can further be said that because of the role that African philosophy plays in education, African philosophical discourse is considered to be embedded in, and integrated with, a rational discourse, and an African philosophy of education (Gyekye, 1992). Here, rational discourse refers to the application of logic in ordinary conversation. An African philosophy of education is concerned with the rationality of beliefs and the procedures used to express those beliefs. From this view, it is expected that the ways in which a person's beliefs are expressed, are done to be understandable and transparent (*cf*. Gyekye, 1992). In order for these beliefs to be fully understood and transparent, and therefore rational, it must be viewed from within a real-life context. This notion is significant, because rationality is often considered to be a critical response to the challenges that societies face (Waghid, 2014). Gyekye (1992) considers rationality to be a culture-dependent idea. It is, however, important to note that rationality that is applied within Western culture will differ from that of African culture (*cf*. Gyekye, 1992). Western culture is often reflective of individualistic values, whereas African culture is more indicative of communitarian values (Metz, 2015). The notion that the values reflected in Western culture differs from that of African culture, is significant when it comes to education. A crucial part of ecojustice education is not only having environmental knowledge, but also having knowledge of customs and traditions from various communities and civilizations around the world (*cf*. 3.2.2). Ecojustice education therefore comprises of environmental knowledge and cultural knowledge. Environmental knowledge encompasses human interactions with the land, water, air, and all other living entities on Earth. Cultural knowledge, on the other hand, refers to the practices, traditions and methods of relating and knowing that provide mutual well-being among community members and, in general, produce more sustainable ways of living (Bowers, 2017). Because ecojustice education combines environmental knowledge with cultural knowledge, it generates an awareness of the multi-layered nature of the interdependency of life-sustaining systems. This, together with an explicit understanding of relationships and processes, and an embodied knowledge of community relationships and the ecology of place, promote sustainability (*cf.* Bowers, 1995). Even though ecojustice education aims to promote sustainability through teaching and learning, the true success of ecojustice education lies in the

promotion of the interrelationships between humans and the more-than-human. According to Lowenstein *et al.* (2010), those who learn to investigate social and environmental issues are able to acknowledge their interconnectedness to other entities, as well as the influence that cultural, political and economic forces have on them. This process allows for individuals to become more engaged with their communities (Lowenstein *et al.,* 2010). For learners to become more engaged with their communities, it is crucial that community-based learning forms part of the curriculum, as it provides learners with the opportunity to build a connection with others and the environment, and therefore also learn what needs to be done to sustain communities (*cf*. 1.1).

Based on my knowledge of ecojustice and communitarianism, it is my contention that changes in the relationship between humans and the more-than-human can be influenced by the ways in which communities view the more-than-human. If the relationship(s) between humans and the more-than-human, and the environmental issues that accompany these, are to improve, community-based learning is imperative (*cf*. 3.4.5). And when community-based learning is reflective of African communitarian values, and is set within an ecojustice education framework (*cf*. 3.4.5), the values of *ubuntu* and *ukama* can be realised (*cf*. 4.3). It can therefore be said that African communitarianism holds a number of implications for education.

4.5. EDUCATIONAL IMPLICATIONS OF AFRICAN COMMUNITARIANISM

Taking into consideration the values reflected by communitarianism and African communitarianism, the educational implications of African communitarianism will now be considered.

Central to this consideration is the conceptualisation of community as the interconnectedness between humans and the more-than-human (*cf*. 4.2; Eze, 2017). However, this interconnectedness is not considered to be a passive determinant of human survival within the larger ecological system, but rather a complex series of interdependent relationships that manifests into specific cultural and environmental commons (*cf.* 3.4.2; Kruger *et al*., 2020). The interaction between living things and inanimate objects is possible through a combination of mobile forces. These interacting forces constitute the emergence of human subjectivity through a mutual and co-constitutive unfolding of the larger community (*cf*. Kruger *et al*., 2020). It can

therefore be said that the interacting forces between living things and inanimate objects will impact on African communitarianism, and hold significant implications for education, and ecojustice education in particular (*cf*. 2.4).

For the purpose of this study, I highlight specific implications for ecojustice education that is informed by African communitarianism. These implications point to the role of ecojustice education in facilitating constructive interaction between humans and the more-than-human in the community, as a localised response in the form of community-based teaching and learning. and as a political practice that reflects an African environmental ethic (Kruger *et al.,* 2020).

The ability of ecojustice education to revitalise community alternatives for thriving and sustainable communities, is primarily dependent on the establishment and re-establishment of positive relationships between humans and the more-than-human (*cf*. Martusewicz *et al.,* 2015). While ecojustice education depends on the concurrent development of positive relationships between humans and the natural world, that are equal to the relationships between people, it is also responsible for creating, promoting, and preserving such relationships (Thiele, 2013). From an African communitarian perspective, in which we share life rather than claim ownership of it, this responsibility extends to the creation of harmonious relationships that are characterised by inter-subjectivity as well as a vision of community that goes beyond humans in order to be inclusive of the more-than-human (Behrens, 2013). In this respect, ecojustice education is based on the idea that life is not only limited to certain entities and their subjective authority, but that it also includes the interconnected web of life which consists of humans as well as non-human and non-living entities (Behrens, 2013). It can therefore be said that ecojustice education grants legitimacy to the needs of all entities in the process of becoming self-sustaining communities (*cf.* Peters, 2017). As a result of moral consideration being extended to entities other than humans, ecojustice education also goes beyond a teacher-student connection defined by discussions of environmental concerns, and the identification of community resources in relation to their immediate ecosystems (Kruger *et al*., 2020). In this regard, ecojustice education should include platforms that recognise commons-based practices and knowledge that support the development of community and shared, common goods (Kruger *et al.,* 2020). Ecojustice education grounded in communitarianism therefore not only challenges a hierarchised understanding of the

different forces that make up an ecology, but also emphasises that sustainable living is enabled by establishing harmonious interconnectivity amongst humans and the more-than-human (Le Grange, 2012). By implication, communitarian-based ecojustice education not only refutes a hierarchical understanding of the various forces that comprise an ecology, but it also emphasises that harmonious interconnectivity between humans and the more-than-human is a prerequisite for sustainable living.

It can further be assumed that the contribution of African communitarianism in ecojustice education lies in the construction of eco-communities, where no individual, community or environment is considered to be superior in terms of moral standing or acknowledgment (Eze, 2017). Thus, ecojustice education plays a crucial role in establishing eco-communities, where cultural and environmental commons are revitalised to assume the duties and responsibilities of people towards nature, equal to those of people to people, without imposing on the ability of the natural system to regenerate itself (Thiele, 2013).

Ecojustice education, as defined in African communitarianism, enables a localised response to the ways in which the global climate crisis affects African communities in terms of historical and cultural experiences. When considering ecojustice education as a localised response, it is also important to consider how it is adjusted to the historically placed setting where communitarian practices are discussed and considered for the benefit of both the community and the ecosystem (Kruger *et al.,* 2020).

It can be said that because communitarianism has the ability to inform community-based education, it can expose and eliminate hierarchical relationships in communities that undermine social justice and ecojustice (Kruger *et al.,* 2020). This can be ascribed to the diverse and inter-cultural ways in which ecojustice education aims to restore the relationship(s) between humans and the more-than-human. The relationships(s) between humans and the more-than-human can be restored because ecojustice education has the ability to generate an understanding of the more-than-human, as it draws on cultural and environmental commons to identify community alternatives for improved sustainable living (*cf*. Lowenstein *et al.,* 2010). In order to generate such an understanding, community-based ecojustice education must be implemented in school curricula. It is able to foster intercultural communication and interaction

between humans and the more-than-human, that could build more inclusive and sustainable communities that are conscious of the larger ecological networks that form the basis of these communities (*cf.* Kruger *et al.,* 2020). However, it is important to remember that community-based education and how it is implemented will change over time and space, depending on the unique historical, diverse cultural, and ecological contexts in which they take place (*cf*. Behrens, 2013).

Education that is informed by African communitarianism recognises the intrinsic value, connection, and interdependence of all species, people, and ecosystems without assigning preference to humans, the community, or the environment (*cf.* Eze, 2017). It is therefore my contention that the awareness that ecojustice education, framed within African communitarianism, creates the interconnectedness and interdependence of humans and the more-than-human, provides opportunities for civil societies to be transformed into eco-communities, which is essentially a human interest.

4.6. SUMMARY

This chapter explored the different ways in which ecojustice and ecojustice education could be reconceptualised in order to nurture more-than-human communal relationships (*cf*. 1.4.3).

By conceptualising communitarianism, I found that communitarianism is pivotal to understanding the relationship between humans and the more-than-human (*cf*. Kruger *et al.,* 2020). From a communitarianism point of view, individuals and the communities that they find themselves in, are dependent on each other to not only survive, but to thrive (*cf*. Eze, 2008). Communitarianism therefore centres on the notion of community, which is characterised by the shared goals and values of groups of individuals who also share a common history, geographical location and/or interests (*cf*. Gideon, 2019). A community, within the African context, is not only regarded as comprising of humans, but also of non-humans and the non-living (*cf.* Eze, 2017). It can therefore be said that even though communitarianism focuses on the social connections between humans, it also acknowledges the more-than-human as being a part of a community (*cf*. 4.2). As a consequence, communitarianism is indicative of respect and appreciation for the more-than-human, which also results in peaceful co-existence between humans and the more-than-human world (*cf*. Samuel & Leonard,

2018). The conceptualisation of communitarianism served as a basis from which African communitarianism could be elaborated on (*cf*. 4.2).

African communitarianism is a philosophy that is prevalent in many African societies (*cf.* Metz, 2019). African communitarianism allows for communities to prosper, but prosperity is reliant on maintaining harmony within communities (*cf*. Ikuenobe, 2006). Harmony in communities is maintained because of the intrinsic worth, interconnectedness and interdependence that African communitarianism ascribes to humans as well as the more-than-human (*cf*. 4.3). It proposes that no entity on the planet can claim a superior position above all the others, resulting in a peaceful co-existence between humans and the more-than-human (*cf*. 4.3). As a result, the concepts of community and harmonious relationships are deeply rooted in the values of African culture (*cf.* Kaya & Seleti, 2013). Harmonious relationships are considered to be a part of the cultural values reflected by African communitarianism, and therefore African communitarianism is considered to be a restorative force between humans and the more-than-human. Restoring the relationship(s) between humans and the more-than-human is imperative for addressing environmental deterioration (*cf*. 4.3). African communitarianism can, by implication, respond to environmental problems experienced on the African continent (*cf.* Watadza, 2016), due to the values on which African communitarianism is based. These values are based on religious ideologies, morality, common good, goodwill, *ubuntu* and *ukama,* which contribute to building positive relationships between humans and the more-than-human (*cf.* 4.3).

Because of the ability of African communitarianism to build relationships between humans and the-more-than-human, and because positive interrelationships between these entities are needed to address environmental concerns, African communitarianism is equipped to be a philosophical foundation for education (*cf.* Enslin & Horsthemke, 2016). It is, however, important to note that cultures across the world have different views of the world that affect their relationship with the environment, which will also have an influence on education (*cf.* 2.4).

An African approach to education compared to a Westernised approach, aims to empower communities by promoting diversity and lived experiences, in order to challenge Western education models (*cf*. Higgs, 2003). This comes as Western education models stand in contrast to African education models. These tend to focus

more on the well-being of the individual rather than that of the community, making it more individualistic than communitarian in nature (*cf*. 4.5). In order for communitarian values to form part of education models, it is crucial that ecojustice education be implemented in school curricula (*cf.* 3.4). This is because ecojustice not only teaches environmental knowledge, but it also teaches learners about the different customs and traditions of different communities and civilisations (*cf*. 3.4). It can therefore be said that ecojustice education, guided by African communitarianism, teaches both environmental and cultural knowledge.

After discussing the importance of environmental and cultural knowledge in education for building and restoring the relationship(s) between humans and the more-than-human, the next chapter explores the potential of the *Curriculum Assessment Policy Statements* to determine the ways in which it promotes harmonious more-than-human communal relationships.

CHAPTER 5: THE POTENTIAL OF THE CURRICULUM ASSESSMENT POLICY STATEMENTS FOR THE PROMOTION OF HARMONIOUS MORE-THAN-HUMAN COMMUNAL RELATIONSHIPS

5.1. INTRODUCTION

In the previous chapter, I discussed the ways in which ecojustice and ecojustice education can be reconceptualised to nurture harmonious more-than-human communal relationships. The aim of this chapter was to explore the potential of the *Curriculum Assessment Policy Statements* (CAPS) for the promotion of harmonious more-than-human communal relationships (*cf*. 1.4.4). I analysed the *Curriculum Assessment Policy Statement of Natural Sciences Grade 7-9 (2014)*, together with other South African policy statements, including the *Constitution of the Republic of South Africa* (Act 108 of 1996) and the *National Environmental Management Act* (Act 107 of 1998). I positioned the CAPS (2014) within the broader legislative context, and thereafter discussed the findings of both the document and policy analyses separately, as presented in the mentioned policies and documents. A content analysis of the CAPS education policy was done in reference to the aims, objectives, and the underlying values of the policy to determine the potential of the promotion of harmonious more-than-human communal relationships. The document analysis will be used to review printed official education-related documents to explore the views of policymakers. The study will use qualitative data analysis to explore the aim of this chapter.

By analysing these policy statements, it allowed me to determine whether or not they have the potential to change the anthropocentric positioning of humans over the more-than-human, towards a position that acknowledges the intrinsic value of the more-than-human (*cf.* 3.3). This chapter further assisted me in establishing if these policy statements encourage learners to be engaged with their local communities, their living environments, and the more-than-human, and in doing so, promoting more-than-human communal relationship(s). It was also my intention to determine if ecojustice education, the interconnectedness and interdependence of humans and the more-than-human, and values like morality, common good, goodwill, *ubuntu* and *ukama* on

which African communitarianism centres, are promoted in South African policy statements (*cf*. 4.3).

A policy analysis and document analysis were therefore done in an attempt to determine what the potential of South African curriculum policy statements are, for promoting harmonious more-than-human communal relationships (*cf*. 1.3.4).

5.2. QUALITATIVE ANALYSIS: DOCUMENT AND POLICY ANALYSIS

Qualitative data analysis involves the categorisation and interpretation of information in order to draw conclusions about the meaning of the information and what it represents. The ultimate goal of conducting a qualitative data analysis is to compare multiple sources, texts, or examples in order to arrive at generalisable conclusions (Flick, 2014). In alignment with the qualitative approach in this study, the research methods used to gather data included a literature review, a document analysis, and a policy analysis (*cf*. 1.6.3).

5.2.1 DOCUMENT ANALYSIS

Conducting a document analysis, involves a systematic procedure in which documents are studied, evaluated, and interpreted in order to obtain a deeper knowledge of their content (Bowen, 2009). It can be said that a document analysis involves gathering contextual information by examining previously published documents. Analysing such documents allows for the unbiased analysis of written policies (Wach, 2013). It is important to note that a document analysis is done according to a set process. The document analysis process involves skimming, reading and interpreting the selected document(s) (Bowen, 2009). This means that a document is initially superficially examined, then thoroughly examined, and then interpreted (*cf.* Bowen, 2009). Such a process allows the researcher to evaluate documents in ways that produce a better understanding of the content found within those documents. Here, it is important that the researcher maintains a balance between objectivity and sensitivity regarding document content (Bowen, 2009). When compared to other qualitative research methods, a document analysis also has certain advantages and disadvantages. A document analysis is considered to be an efficient and less time-consuming way of gathering data. This can be ascribed to the researcher having to select data, rather than collecting it from other, different sources (*cf*. Armstrong, 2021). The documents that I considered to be the most applicable to my study and therefore analysed

included the *Constitution of the Republic of South Africa* (Act 108 of 1996), the *National Environmental Management* Act (Act 107 of 1998) and the *Curriculum and Assessment Policy Statement* for Natural Sciences Grades 7-9.

Conducting a document analysis served as a method to answer questions that arose from the literature review that I did in the previous chapters (*cf*. Armstrong, 2021). It is further said that a qualitative document analysis ensures data stability, because the data that is gathered through a document analysis is considered to be consistent because of the inability of researchers to alter existing data (Morgan, 2022). According to Denzin and Lincoln (2011), a qualitative document analysis requires data to be analysed and interpreted to create meaning, gain deeper understandings and build empirical knowledge. A document analysis does, however, lend itself to the interpretation of existing texts and because of such interpretation it has the ability to be subjective in nature (*cf.* Morgan, 2022). Conducting a document analysis served a way to find answers to questions that arose from the literature review that I did in the previous chapters (*cf*. Armstrong, 2021).

As this study was a desktop study, no participants formed part of the study. The document and policy analysis that was conducted, was guided by Samuel's (2017) and Taylor, Rizvi, Lingard and Henry's (1997) recommendations on policy reading. According to Samuel (2017), policy reading should extend beyond conducting content analysis in an attempt to address the social, cultural, economic and political implications that the specific policy holds for society. I therefore made use of a document analysis to foreground a policy framework for ecojustice education in South Africa. The documents that were analysed consisted of the *Constitution of the Republic of South Africa* (Act 108 of 1996), the *National Environmental Management Act* (Act 107 of 1998), and the *Curriculum and Assessment Policy Statement for Natural Sciences* Grades 7-9 (2014). This comes as the *Constitution of the Republic of South Africa* is the superior law in South Africa, which means that all other laws and policies constructed and implemented in South Africa must align with the *Constitution 1996* (*cf*. 5.2.1). The *National Environmental Management Act* (NEMA) is reflective of the South African government's responsibility to protect the environment through environmental law (*cf*. 5.2.2). This act compels the government to uphold the social, economic and environmental rights that are outlined in the *Constitution* (*cf.* 5.2.1.1). The *Curriculum and Assessment Policy Statements* consist of different policy

documents for the different subjects and grades that are presented in South African public schools. They provide teachers with learning program guidelines and subject assessment guidelines for each subject (*cf*.5.4). Given the description above, it is essential to place CAPS (2014) within the larger legislative framework, because the Constitution (1996) and NEMA (1998), as legislative policy documents, have a significant impact on the implementation of CAPS (2014).

5.2.1.1. THE CONSTITUTION OF THE REPUBLIC OF SOUTH AFRICA (ACT 108 OF 1996)

The *Constitution of the Republic of South Africa* (Act 108 of 1996) is considered to be the supreme law that exists in South Africa, and holds the most significant rules of the South African political system (RSA, 1996). This, by implication, means that the *Constitution* is the standard by which every other law is evaluated in order to protect the rights of the people of South Africa, as well as stipulating the obligations of the population. Chapter 1 of the *Constitution of the Republic of South Africa* (Act 108 of 1996) is based on various founding provisions. According to these provisions, the Republic of South Africa is founded on values that include human dignity, non-racialism, non-sexism, the supremacy of the *Constitution,* and universal adult suffrage. The *Constitution* is further regarded as a transformative document that "seeks to change South Africa for the better, rather than keeping things as they are" (McConnachie, Skelton & McConnachie, 2017). It is said that the *Constitution of the Republic of South Africa* is responsible for creating laws, protecting human rights and providing guidance for the ways in which political representatives are elected. The laws reflected and the human rights protected in the *Constitution* mainly pertain to equality, fairness, and justice (Kruger, 2019). Chapter 2 of the *Constitution of the Republic of South Africa* (Act 108 of 1996) consists of a *Bill of Rights,* which is considered to be the cornerstone of South African democracy. The *Bill of Rights* (section 7-39) upholds the democratic principles of freedom, equality, and human dignity, as well as the rights of every citizen of South Africa (RSA, 1996). It is then the responsibility of the government to ensure that the rights presented in the *Bill of Rights* be respected, protected, and promoted. The *Bill of Rights* of the *Constitution* (1996) outlines different groups of human rights that must be upheld. Because this study comprises environmental and educational elements (*cf*. 4.4), I analysed sections 24

and 29 of the *Bill of Rights* of the *Constitution* (1996). Section 24 of the Constitution (1996) pertains to the environment, and Section 29 to education.

5.2.1.1.1. EDUCATION

The *Constitution of the Republic of South Africa* (Act 108 of 1996) provides a general legislative framework for education, and its enactment was the start of bringing about changes to the education system. In doing so, the education system of South Africa was transformed.

According to Section 29 of the *Constitution,* everyone has the right to "a basic education" and to "further education" (RSA,1996: 29). It is also stated that everyone has the right to "receive education in the official language or languages of their choice in public education institutions where that education is reasonably practicable" (RSA, 1996: 29). The *Constitution* thereby declares that all individuals from public educational institutions are entitled to an education in the official language or languages of their preference, provided that such instruction is reasonably feasible. Receiving instruction in one's mother tongue language is imperative, not only for strengthening one's traditional knowledge, but also to strengthen one's ability to better understand oneself and the culture(s) of which you form part (*cf*. 3.4.3). It is further said that people's perception(s) of the world impacts on the language they use, and that these language practises also affect the ways in which knowledge is carried forward from one generation to the next (*cf*. 3.4.3). Language processes are therefore also unique to specific cultures, because it is derived from specific lived experiences (*cf.* 3.4.3).

In order to ensure that the right to basic and further education, and the right to receive education in the official language of one's choice, all reasonable educational alternatives must also be considered by the State. It is important that the government take into account "equity; practicability; and the need to redress the results of past racially discriminatory laws and practices" (RSA, 1996: 29). It is, in other words, critical that the government consider equity, practicality, and the necessity to make amends for the harm caused by previous discriminatory laws and policies in South Africa. The government must therefore establish and maintain an education system that upholds the rights of individuals that pertain to education, as set out by the *Constitution* (1996).

The rights in Section 29 of the Constitution that relate to education must be considered in conjunction with the goal(s) of education reflected in other documents, such as the CAPS (2014). One of the other documents in which the goals of education are reflected is the *South African Schools Act* (Act 48 of 1996). The principles of the *South African Schools Act* (SASA) align with those of the *Constitution of the Republic of South Africa,* and state that the aim of education is to

> provide an education of progressively high quality for all learners and in so doing lay a strong foundation for the development of all our people's talents and capabilities, advance the democratic transformation of society, combat racism and sexism and all other forms of unfair discrimination and intolerance, contribute to the eradication of poverty and the economic well-being of society, protect and advance our diverse cultures and languages, uphold the rights of all learners, parents and educators (RSA, 1996: 5).

It can therefore be said that the aims of education are to expose learners to good quality education, to advance democratic transformation, to oppose unfair discrimination, to promote diversity, and to uphold the Constitutional rights of all parties involved. It is further said that education should impart the ability to value and exercise one's human rights, and in doing so, cultivate learners' capacity for civil and political decision-making. Education should also provide the skills required for learners to engage in the economy (*cf*. 5.2.1). To this end, curriculum content plays a significant role in upholding the right to education, and should provide learners with the knowledge and abilities needed to properly engage in society (*cf*. 5.2.2). According to the South African Human Rights Commission (SAHRC, 2012), education should be acceptable and adaptable. Acceptability refers to the need for high-quality, culturally appropriate, and relevant instruction in both form and content. Adaptability, on the other hand, is concerned with the ability of education to change as societies change in order to meet the needs of the learners in a variety of social and cultural contexts.

5.2.1.1.2. THE ENVIRONMENT

Section 24 of the *Bill of Rights* of the *Constitution of the Republic of South Africa* pertains to the environment, and is also known as the environmental right (RSA, 1996). According to the Constitution's environmental right(s) (RSA, 1996: 24), everyone has the right to:

- an environment that is not harmful to their health or wellbeing; and
- have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that—

(i) prevent pollution and ecological degradation;

(ii) promote conservation; and

(iii) secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.

Environmental law is, by implication, one of the legislative measures that aims to protect the environment. In South Africa, the *National Environmental Management Act (1998)* (NEMA) is an expression of the *Constitution* (1996). The aim of the NEMA (1998) is to co-ordinate environmental policies and plans of national departments in ways that promote sustainability (*cf*. 5.2.2). The government fulfils the "role as custodian holding the environment in public trust for the people" (RSA, 1998: 28). In the South African context, the government is considered to be local, provincial and national spheres of government, and responsible for implementing legislative measures to protect the environment (RSA, 1996). The *Bill of Rights* of the *Constitution* pertaining to the environment, therefore, provides legislation for the protection of the environment through the encouragement of sustainable resource use, and economic and social development (*cf.* RSA, 1996).

Another way in which the environment can be protected, is by South Africa becoming a signatory of environmental treaties. South Africa is a signatory of various international environmental treaties, which obligates the government to take binding and non-binding international laws into consideration when making decisions pertaining to the environment (*cf.* 1.2). The information on environmental degradation provided by the *Brundtland Report* of 1987 (United Nations, 1987) and the *United Nations Conference on Sustainable Development* of 1992 (United Nations, 1992), greatly impacted South Africa's agreement to be signatories of different international environmental treaties (*cf*. 1.2). According to the *Brundtland Report,* the North's unsustainable consumption and production habits, together with the South's extreme poverty, are the primary causes of the world's serious environmental problems (Kruger, 2019). These problems called for strategies to unite development and the environment. The *United Nations Conference on Sustainable Development* of 1992

(United Nations, 1992) emphasised areas relating to hunger and poverty, economic inequalities, and environmental degradation, where international and local efforts needed to be strengthened (Kruger, 2019). From the *Brundtland Report* and the *United Nations Conference on Sustainable Development,* it became clear that global action was needed to safeguard the planet's ecological systems (*cf*. 1.2).

According to the NEMA (RSA, 1998), the Committee for Environmental Co-ordination is responsible for providing provincial and national government(s) with the guidance needed to execute government initiatives pertaining to the environment. It is therefore the responsibility of the Committee for Environmental Co-ordination to ensure that the provincial and national government(s) implement the legislative measures needed to protect the environment (*cf.* 5.2.1). If national and provincial government structures do not protect the environment, and environmental conditions cause harm to the health or well-being of individuals, it infringes on their human rights (RSA 1996).

The South African Human Rights Commission (SAHRC) is another entity responsible for ensuring that the human rights of individuals are protected. According to the *Constitution* (1996), one of the functions of the SAHRC is to "provide the Commission with information on the measures that they have taken towards the realisation of the rights in the *Bill of Rights* concerning housing, health care, food, water, social security, education and the environment" (RSA, 1996: 93). It is, in other words, the responsibility of the SAHRC to ensure that the *Bill of Rights* of the *Constitution* be realised in terms of the living conditions of those who live in South Africa (*cf*. 5.2.1). This notion, together with the notion that environmental law in South Africa is founded in the *National Environmental Management Act* (*cf.* 5.2.1.1), gave rise to the analysis of the NEMA (Act 107 of 1998) in the following section.

5.2.2. THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT (ACT 107 OF 1998)

The South African government passed specific environmental laws in order to uphold its commitment to protect the environment (*cf*. 5.2.1.1). This commitment is carried out through the *National Environmental Management Act* (Act 107 of 1998) (RSA, 1998). Found within the NEMA (1998) are environmental rights that are protected by the *Constitution* (*cf*. 5.2.1.1). These rights pertain to the right of South African residents to

have access to environments that are conducive to their health and well-being, and to environments that can be preserved for future generations (*cf.* 5.2.1.1). The NEMA (1998) therefore provides information on ways in which these constitutional rights can be safeguarded in reality.

The purpose of the *National Environmental Management Act* (1998) is

> [t]o provide for co-operative, environmental governance by establishing principles for decision-making on matters affecting the environment, institutions that will promote co-operative governance and procedures for co-ordinating environmental functions exercised by organs of state; and to provide for matters connected therewith.

By implication, the aim of the NEMA (1998) is to establish institutions that will support cooperative governance and protocols for coordinating environmental functions carried out by state. This includes guidelines for decision-making on issues impacting the environment, in order to facilitate co-operative, environmental governance and to address issues related to it (*cf*. NEMA, 1998).

The NEMA (1998) is concerned with the actions of all governmental agencies that have an impact on the environment throughout the Republic of South Africa. It also takes into account all other pertinent and appropriate factors, such as the State's obligation to uphold, defend, and advance the social, economic, and social rights outlined in the *Constitution of the Republic of South Africa* (Act 108 of 1996). According to the NEMA (1998), “many inhabitants of South Africa live in an environment that is harmful to their health and well-being” (RSA, 1998: 2). This statement leads me to believe that the development of this act is based on the notion that the natural environment in which some South Africans find themselves, is often not healthy or conducive to their well-being, hence, the need for a *National Environmental Management Act*. According to the NEMA (RSA, 1998: 2) the South African Government has a responsibility to “respect, protect, promote and fulfil the social, economic and environmental rights of everyone”. According to the *Economic and Social Rights Review in Africa* (2002), economic and social rights include the people’s right to education, land, decent housing, health care, and enough food and water. In order to safeguard economic, environmental and social rights, ecojustice must be promoted. This is because ecojustice causes humans to acknowledge the

interdependence of communities and larger ecological systems, as social justice issues and ecological prosperity are inseparable (*cf*. 1.5).

Economic and social rights also include the provision of social aid to the underprivileged, as well as environmental rights (RSA, 1996). According to the NEMA (1998: 2), "inequality in the distribution of wealth and resources, and the resultant poverty, are among the important causes as well as the results of environmentally harmful practices". According to the United Nations Environment Programme (2021), socio-economic development and poverty reduction can only occur in an environment where sustainability is practiced (*cf*. 2.3; 3.2.3.1). This is because knowledge about sustainability is based on scientific evidence. Sustainability therefore has the ability to promote ecocentric worldviews, rather than anthropocentric worldviews (*cf*. 3.2.3.1). It is then that ecosystem goods and services from the natural environment can be used responsibly and assist employment development, income generation, poverty alleviation, safety net contributions, and inequality reduction. It can therefore also be said that "sustainable development requires the integration of social, economic and environmental factors in the planning, implementation and evaluation of decisions to ensure that development serves present and future generations" (RSA, 1998: 2). Sustainable development strategies are crucial for assisting countries in adapting to the problems presented by environmental issues (*cf*. 3.3), thereby safeguarding vital natural resources for the present and future generations (United Nations Environment Programme, 2021). By implication, "everyone has the right to have the environment protected, for the benefit of present and future generations through reasonable legislative and other measures that prevent pollution and ecological degradation; promote conservation; and secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development" (RSA, 1998: 2). Hence, the importance of environmental acts like the NEMA (1998).

In terms of the management of the environment and the principles upon which it is based, Section 2 of the NEMA states that "[e]nvironmental management must place people and their needs at the forefront of its concern, and serve their physical, psychological, developmental, cultural and social interests equitably" (RSA, 1998: 10). The environment, should, by implication, be managed to meet the various needs of humans (*cf*. 5.2.2.1). However, meeting the needs of humans does not necessarily refer to meeting the needs of individuals. From a communitarian view,

communitarianism can promote prosperity amongst humans if humans focus on the needs of the community as a whole, rather than the needs of the individual (*cf*. 4.2). In order to meet these needs, the environmental principles of the NEMA (1998) serve as the "general framework within which environmental management and implementation plans must be formulated" and "as guidelines by reference to which any organ of state must exercise any function when taking any decision in terms of this Act or any statutory provision concerning the protection of the environment" (RSA, 1998: 10). By implication, the principles of the NEMA (1998) serve as a guide for the ways in which the environment should be protected. The principles that are particularly relevant to this study, are related to sustainable development and the factors that have to be taken into consideration in order to promote it.

From these principles, I gathered that an emphasis is placed on sustainable development and environmental management. In order for sustainable development to be realised, the "disturbance of ecosystems and loss of biological diversity; pollution and degradation of the environment; disturbance of landscapes and sites that constitute the nation's cultural heritage" should be minimised or even completely avoided (RSA, 1998: 11). This can be done through environmental education, as environmental education has the ability to improve learners' problem-solving abilities, and in doing so, it can also change their views on sustainable development (*cf*. 2.5.2). Adding components of sustainable development to school curricula further has the ability to improve the relationship between humans and the more-than-human (*cf*. 2.4).

It is said that the NEMA (1998) promotes sustainable development by cautioning against biodiversity loss, pollution, environmental degradation, and the disturbance of culturally significant landscapes. Sustainable development is also dependent on being aware of the consequences that the depletion of resources holds for people and the environment (*cf*. 2.4). The expectation exists that with this realisation, non-renewable resource use will be reduced. This is because of the ability of education on sustainable development to increase people's knowledge of common goods. It is said that changes in human behaviour can occur when people come to realise that common goods, which include land and natural resources, can become depleted due to overuse (*cf*. 2.2.3). This in turn, will be detrimental to human existence, hence the importance of sustainable development. According to the NEMA (RSA, 1998: 11), sustainable development also ensures that "renewable resources and the ecosystems of which

they are part do not exceed the level beyond which their integrity is jeopardised". This, by implication, means that people are able to recognise the consequences of their actions and the impact that these actions have, not only on the environment, but also on other people's environmental rights. Sustainable development includes the protection of natural resources. This is because natural resources are considered to form part of the natural capital and wealth of communities, and contribute to the prosperity of its people (*cf.* 3.2.3.1). In order to ensure that natural resources are protected, the NEMA (1998) holds individuals and institutions accountable for damage that is done to the environment (NEMA, 1998). The NEMA (1998) thereby centres on compliance, enforcement, and protection to safeguard the environment. One of the ways in which the environment and its natural resources can be protected, is through environmental management (NEMA, 1998).

5.2.2.1. ENVIRONMENTAL MANAGEMENT

According to the NEMA (1998), environmental management is considered to be an integrated approach. This approach is concerned with "acknowledging that all elements of the environment are linked and interrelated, and it must take into account the effects of decisions on all aspects of the environment and all people in the environment by pursuing the selection of the best practicable environmental option" (RSA, 1998: 13). The acknowledgement of the interrelatedness of all entities therefore guides the ways in which issues pertaining to the environment are managed. Environmental issues are managed through decision-making (*cf*. 5.2.2.1). The decisions that are made "must take into account the interests, needs and values of all interested and affected parties, and this includes recognizing all forms of knowledge including traditional and ordinary knowledge" (RSA, 1998: 13). Conducive environmental decisions can be made by combining existing knowledge and indigenous knowledge. This is because of the ability of indigenous knowledge systems to provide solutions to environmental issues, especially on the African continent (*cf.* 4.3). This comes as traditional African knowledge is derived from the African culture, in which the spirit of community and harmony are held in the highest regard. So too are the values of *ubuntu* and *ukama*, that are rooted in African culture and African communitarianism (*cf*. 4.3). The spirit of community and harmony, together with African communitarian values like *ubuntu* and *ukama,* have the ability to promote the relationship(s) between humans and the more-than-human. This is why an African

environmental outlook is considered to be different from other environmental outlooks (*cf*. 4.3). Environmental outlooks differ in terms of how the relationship between humans and the more-than-human is viewed, and in turn also the way(s) in which the environment is managed (*cf.* 3.3).

The environment is also managed by ensuring the promotion of community well-being and empowerment (*cf*. 3.4.2). It is said that environmental education is one of the ways in which communities can be empowered (*cf*. 5.2.2.1). This is because of the ability of environmental education to increase individuals' environmental awareness by sharing one's knowledge and experience(s) (NEMA, 1998). When attempting to manage environmental issues, the impact of social, economic and environmental activities must be determined in terms of the advantages and disadvantages it holds for people and the environment. Only when the implications of the various activities on people and the environment have been assessed, can appropriate decisions be made (NEMA, 1998). For appropriate decisions to be made, "intergovernmental co-ordination and harmonisation of policies, legislation and actions relating to the environment" is imperative (RSA, 1998: 13). When policies, legislation and people's actions align with one another, it is said that environmental resources can serve public interests, and be protected (*cf*. 5.2.2.1). It is further stated that the environment must be safeguarded because it is part of people's "common heritage" (RSA, 1998: 13). According to the NEMA (1998), additional attention in the management and planning procedures of ecosystems prone to resource usage and development pressure, is needed to safeguard such ecosystems, and therefore also our common heritage (*cf*. 5.2.2.1). In South Africa, the most vulnerable ecosystems include coastal shores, estuaries and wetlands (NEMA, 1998). But, in order for ecosystems to be protected, environmental implementation plans need to be executed (NEMA, 1998).

The purpose of environmental implementation plans is to "co-ordinate and harmonise the environmental policies, plans, programmes and decisions of the various national departments that exercise functions that may affect the environment or are entrusted with powers and duties aimed at the achievement, promotion and protection of a sustainable environment" (RSA, 1998: 23). It can be said that plans for environmental management, and the implementation of environmental management, aim to integrate environmental policies, plans, schedules, and decisions made by various national departments in South Africa. These departments therefore not only have the

necessary authority, but also a responsibility, to create integrated policies, plans, schedules and decisions that are conducive to maintaining healthy ecosystems and sustainable environments (*cf*. 5.2.2.1).

Because policies are considered to be one of the ways in which healthy ecosystems and sustainable environments can be maintained, I chose to also conduct a policy analysis.

5.3. POLICY ANALYSIS

Hartshorne (1999: 5) indicates that policy is considered to be “any activities, plans, thoughts and decisions undertaken by the government through regulations and legislations, with the aim of bringing about development at all levels and departments in order to offer better services to the community”. Furthermore, Hartshorne (1999: 5) goes on to specify that an education policy is a “course of action adopted by government through legislation, ordinances, and regulations and pursued through administration and control, finance and inspection, with the general assumption that it should be beneficial to the country and its citizens”. By implication, an education policy is regarded as a framework for a government to outline its educational objectives, through an education strategy that is aimed at meeting the needs of society. A policy analysis can be conducted once a policy has been formulated and implemented (Manka, 2022). A policy analysis can be described as a data gathering process that is used to determine the extent to which the policy's objectives have been met. It thereby creates an understanding as to how and why governments enact specific policies, as well as the consequences of those policies (Taylor *et al.,*1997). A policy analysis allowed me to determine and forecast the effects of potential policy alternatives. By doing this, it can also serve to represent and articulate societal interests that are underrepresented in forums for collective decision-making (*cf*. Samuel, 2017).

It was my intention to explore the potential of South African curriculum statements to nurture harmonious more-than-human communal relationships (*cf.* 1.4), I analysed the *Curriculum Assessment Policy Statement of Natural Sciences Grade 7-9*. This analysis involved conducting a context and content analysis, where the content within the policy statement was analysed (*cf*. 5.3.1.1; 5.3.1.2). In order to analyse the content of CAPS (2014), I had to make sure that the information I retrieved, related to the *Constitution* (1996) and the NEMA (1998). This could be done through intertextuality.

The interconnectedness of texts with respect to one another is referred to as intertextuality (Taylor *et al.,* 1997). This means that texts can build upon, draw inspiration from, reference, contrast, influence, and even inspire one another (*cf.* Taylor *et al.,* 1997). By implication, intertextuality is the ability to relate information and knowledge to one another through text to produce meaning. For this study, intertextuality was used to connect the information found in documents and policies, in order to help answer my research questions. Intertextuality can therefore be regarded as a method that provides a framework for analysis. It is specifically suited to qualitative research, as it centres on the subjectivity of the researcher, and selecting content relevant to a specific study, from the unlimited dimensions of knowledge (Flick, 2014). To analyse the CAPS, I made use of intertextuality and drew connections between the CAPS (2014), the NEMA (1998) and the *Constitution* (1996).

5.3.1. THE CURRICULUM AND ASSESSMENT POLICY STATEMENT FOR NATURAL SCIENCES GRADE 7-9

The *National Curriculum Statement* (NCS) for Grades R–12 lays out guidelines for curriculum coverage and evaluation in the South African educational system. The NCS was updated to improve implementation, and the changes were put into effect in January 2012. Changes made to the NCS meant that a single Curriculum and Assessment Policy document with subject statements, learning program guidelines, and subject assessment guidelines for each subject, was created (CAPS, 2014). The *National Curriculum Statement Grades R-12* is, in other words, a policy statement for teaching and learning in South African public schools. The NCS consists of a *Curriculum and Assessment Policy Statements* for every school subject and a policy document called the *National policy pertaining to the programme and promotion requirements of the National Curriculum Statement Grades R-12.* This policy document determines the minimum outcomes, standards, processes, and procedures for assessing learner achievement. According to the DBE (2014), the aim of the *National Curriculum Statement Grades R-12* is to provide learners with meaningful knowledge, skills, and values that are applicable to their own lives. It is further said that the curriculum provides learners with knowledge in local contexts, whilst staying mindful of global imperatives. Such knowledge is, in turn, imperative for achieving the aims of the *National Curriculum Statement Grades R-12* (CAPS, 2014). It can be said that the purpose of this policy statement is to equip learners with the necessary

knowledge, skills and values to be participative members in society. The principles upon which the *National Curriculum Statement Grades R-12* is based, include social transformation, active and critical learning, progression, human rights, inclusion, environmental and social justice, and acknowledging indigenous knowledge systems (CAPS, 2014). The aims of the *National Curriculum Statement Grades R-12* as well as the principles upon which it is based, are significant for my study as it guided the context and content analysis of the *Curriculum Assessment Policy Statement of Natural Sciences Grade 7-9.*

5.3.1.1. CONTEXT ANALYSIS

According to Taylor *et al.* (1997: 45), context refers to the "antecedents and pressures leading to the gestation of a specific policy". Context is therefore regarded as the circumstances under which, and for which, a specific policy is created. Economic, social and political factors are the main contributors that affect the context in which policies are created and implemented (*cf*. Taylor *et al.,* 1997; Samuel, 2017). A context analysis therefore enabled me to explore the reasoning(s) behind a policy.

For this study, understanding the South African context in which the CAPS (2014) is implemented, is crucial. In terms of the South African curriculum, it is important to note that the entire education system, together with the curriculum, has undergone significant changes since the country became a democracy in 1994 (*cf.* CAPS, 2014). This can be ascribed to the aim of the *Constitution* (1996), to "heal the divisions of the past" (RSA, 1996: 1). In 1997, the outcomes-based curriculum was introduced into public schools in South Africa (CAPS, 2014). A review was done in 2000, which led to the revised *National Curriculum Statement Grades R-9* and the *National Curriculum Statements Grades 10-12* (2002). These statements were again reviewed in 2009, and the previous curriculum statements were replaced by the *National Curriculum Statement Grades R-12* (CAPS, 2014)*. The National Curriculum Statement Grades R-12*(2014) is an extension of the previous curriculum, but is aimed at giving more precise instructions on what should be taught and learned during each term (CAPS, 2014).

It can be said that the South African education system and the curriculum have an important role to play in realising the aims of the *Constitution* (RSA, 1996). In the preamble of the *Constitution of the Republic of South Africa* (Act 108 of 1996), it is

stated that the aims of the *Constitution* are to “establish a society based on democratic values, social justice and fundamental human rights”, and “improve the quality of life of all citizens and free the potential of each person” (RSA, 1996: 1). It can therefore be argued that the aims of the *Constitution* (1996) prioritise the well-being of people.

NEMA (1998) is not only responsible for the protection of the environmental rights of the *Constitution* (1996), but it is also significant in providing context for policy statements, like the CAPS (2014), that stem from it. According to the NEMA (RSA, 1998: 3) “many inhabitants of South Africa live in an environment that is harmful to their health and well-being”. It can therefore be said that the development of the NEMA (1998) stemmed from the need to “respect, protect, promote and fulfil the social, economic and environmental rights of everyone and to meet the basic needs of previously disadvantages communities” (RSA, 1998: 3). The NEMA (1998) thereby aims to increase sustainability and the well-being of South African communities. Because of the ability of education to increase community well-being and sustainability through environmental awareness, the NEMA (1998) calls for the implementation of environmental education in educational institutions (*cf.* 3.2.3.1; 5.2.2).

As education is considered to be a central component in realising the aims of the *Constitution* (1996) and the NEMA (1998), I conducted a content analysis of the *Curriculum Assessment Policy Statement of Natural Sciences Grade 7-9* (*cf*. 5.3.1.2).

5.3.1.2 CONTENT ANALYSIS

According to Samuel (2017), “[h]ow we undertake an analysis of policy is directly linked to our conception of a policy”. A policy can be considered to be a textual product, which means that a policy analysis will involve the researcher examining certain propositions that are found in the text itself. Here the researcher is able to summarise the proposals that are found within the policy document (Samuel, 2017). I therefore determined that a content analysis was applicable to my study, specifically of the CAPS (2014).

According to the CAPS (2014), the foundations of science as we know it today can be found in African, Arabic, Asian, European, and American cultures. It has evolved to become part of the cultural heritage of all nations because of the quest to understand the natural world via observation, testing, and proving of concepts. Science is defined as “a systematic way of looking for explanations and connecting the ideas we have”

(CAPS, 2014: 8). It is thereby said that science provides a structured line of thought between the existing knowledge a person has and the new information that a person wishes to acquire. Science is also used to investigate new frontiers, and includes asking questions like “Why is the climate changing around the world? What is making the universe expand? What causes the earth’s magnetic field to change?” It is further stated that “scientific knowledge changes over time as scientists acquire new information and people change their ways of viewing the world” (CAPS, 2014: 8). It can therefore be said that scientific knowledge, gained through science education, has the ability to change people’s view(s) of the world.

The content analysis that I did was guided by Taylor ***et al.’s*** (1997) and Samuel’s (2017) suggested approaches towards analysing texts (*cf*. 5.2.1). These approaches suggest that a policy’s aims, objectives, values and implementation strategies are analysed. I therefore focused on identifying the aims, objectives, values and implementation strategies of the policy in order to determine the potential of the CAPS (2014) for *Natural Sciences Grade 7-9* to promote more-than-human communal relationships (*cf*. 1.3).

The *Curriculum Assessment Policy Statements* (CAPS) for *Natural Sciences Grade 7-9* aims to “provide learners with opportunities to make sense of ideas they have about nature. It also encourages learners to ask questions that could lead to further research and investigation” (CAPS, 2014: 10). Providing learners with such teaching opportunities is imperative for strengthening their relationship(s) with the environment (*cf*. 3.2.3). Through the process of learners making sense of nature, they can gain an understanding of natural processes and also start building a relationship with the more-than-human (*cf.* 3.2.2). Whether learners view the relationship between themselves and the more-than-human to be a relationship where one entity is considered superior to the other(s), or a relationship where all entities are thought to have equal value, will determine their worldview (*cf*. 2.4).

In the CAPS (2014), there are three specific aims that pertain to Natural Sciences, the first of which is to do Science. This means that learners “should be able to complete investigations, analyse problems and use practical processes and skills in evaluating solutions” (CAPS, 2014: 10). Learners are therefore expected to plan for and participate in investigations in order to solve problems that require practical knowledge

(*cf*. 3.3). The ability of learners to conduct such investigations is underpinned by certain values and attitudes (*cf.* 5.2.2). The values and attitudes needed when conducting meaningful investigations include a respect for living things (*cf*. 2.5.2). According to CAPS (2014: 10), “learners should not damage plants; if they examine small animals they should care for them and release them in the place where they found them”.

The second aim of Natural Sciences is for learners to know the subject content and to make connections. Making connections to subject content calls for learners to be taught scientific, technological and environmental knowledge (CAPS, 2014). This knowledge can be gained from Natural Sciences and applied in new contexts (CAPS, 2014). According to CAPS (2014), teaching is aimed at building a framework of knowledge for learners that facilitates their ability to connect ideas and concepts with one another. This is different from learners who only learn facts, and can be ascribed to the ways in which activities, questions and discussions relate to previous knowledge and experiences (*cf.* 3.4.1; 4.5).

The third aim of Natural Sciences is to understand the uses of science (CAPS, 2014). This aim strives for the learners to become aware of how Natural Sciences and traditional knowledge are applied in society and the environment. Learners who do Natural Sciences in school, become aware of the relevance of academic science to daily life (*cf.* 3.2.3.2). Examples of applications include improving water quality, growing food without harming the environment, and constructing homes that use less energy (*cf*. 3.4.3). Understanding the relationship between science and society, enhances an appreciation for the history of scientific discoveries, and the ways in which it is connected to indigenous knowledge and various worldviews (CAPS, 2014).

According to CAPS (2014), the realisation of the aims of Natural Sciences has the ability to develop learners’ cognitive and practical processing skills. The objectives of the CAPS (2014) therefore pertain to the development of various skills, which include “[i]dentifying problems and issues; [r]aising questions; [h]ypothesizing” (CAPS, 2014: 11). When learners are able to identify problems and issues, they are able to articulate the needs of those who form part of society. Learners who raise questions are able to formulate questions about problems and natural phenomena. Hypothesising allows learners to make suggestions or provide explanations for certain facts. Formulating a

hypothesis is then used as a foundation for further investigation that has the ability to prove or disprove the hypothesis (CAPS, 2014). Developing such skills are also crucial for promoting ecocentrism, as it allows learners to think differently about the more-than-human (*cf*. 3.2). Other skills that are emphasised include developing learners' language skills, such as their reading and writing skills. It is stated in the CAPS (2014: 12) that "[t]he ability to read well is central to successful learning across the curriculum. Writing is also a powerful instrument of communication. Writing allows learners to construct and communicate thoughts and ideas coherently. Frequent reading and writing practice across a variety of tasks and subjects enables learners to communicate functionally and creatively". By implication, reading and writing skills are a central component of CAPS (2014), because it enables learners to not only retain the information that they read, but also to reproduce that information. As reading and writing skills form part of one's language skills, it also impacts on the root metaphors and dominant discourses that are created. This is because of the language that is used in the curriculum and its ability to impact on the ways in which we view the more-than-human world (*cf.* 3.4.3).

It can therefore be argued that the curriculum has the ability to nurture the relationship between humans and the more-than-human when the aims and objectives of CAPS (2014) are met. It can further be said that when the relationship between humans and the more-than-human is nurtured, ecocentric values are encouraged (*cf.* 3.3). By implication, the aims and objectives of the CAPS (2014) teach ecocentric values, and can positively impact human behaviour toward the more-than-human (*cf*. 3.3).

Implementation strategies for Natural Sciences include the careful selection of subject content and making use of different approaches to teaching and learning (CAPS, 2014; *cf*. 2.4). According to CAPS (2014: 9), science education should encourage an understanding of "the different cultural contexts in which indigenous knowledge systems have developed; the need for using scientific knowledge responsibly in the interest of ourselves, of society and the environment; the practical and ethical consequences of decisions based on Science". In order to understand the cultural context from which indigenous knowledge is developed, it can be said that it is imperative that the educational content be science-based, and include generational experience (*cf*. 2.4). It is further said that science-based subject content allows for the promotion of environmental ethics, which is crucial for the survival of humans and the

more-than-human, as it can create a shift from an anthropocentric worldview to an ecocentric worldview (*cf*. 3.2.3.1). One of the ways in which such a shift can be orchestrated is by creating a change in ethical reasoning practices. This can be done when instruction provides learners with science-based evidence of the practical and ethical ramifications of their environmental decisions (*cf*. 2.4).

Elements of indigenous knowledge systems also form part of the learning area of Natural Sciences. In the CAPS (2014: 8) it is stated that

> [o]ur forebears would not have survived if they had not been able to learn about the natural world they depended on. They made careful observations, recognised regular patterns in seasons, the life cycles of plants, and the behaviour of animals. They had theories about cause and effect too, and understood many of the relationships in the environment where they lived. These sets of knowledge, each woven into the history and place of people, are known as indigenous knowledge systems.

It can therefore be said that indigenous knowledge systems consist of people's knowledge on seasons, plant life cycles, and animal behaviour, and that it has the ability to acknowledge the different relationships that exist within the environment (*cf*. 4.3). Indigenous knowledge further includes knowledge on "agriculture and food production, pastoral practices and animal production, forestry, plant classification, medicinal plants, management of biodiversity, food preservation, management of soil and water, iron smelting, brewing, making dwellings and understanding astronomy" (CAPS, 2014: 8). It can therefore be said that teaching indigenous knowledge is not only considered to be one of the aims of Natural Sciences, but it can also be considered to be a way in which earth democracies can be implemented in learners' own lives. Teaching earth democracies also has the potential to create communities that live in harmony with their environments (*cf.* 3.4.2.2). In alignment with the goals of the *Constitution* (1996) and the NEMA (1998), the goal of the CAPS (2014) is to prepare learners "for active participation in a democratic society that values human rights and promotes responsibility toward the environment" (CAPS, 2014: 9).

In the section that follows, I discussed the framework for analysis that guided my policy analysis.

5.4 FRAMEWORK FOR ANALYSIS

A framework for analysis is a qualitative research method. This method organises and analyses data through a predetermined analytical framework (Samuel, 2017). An analytical framework consists of pre-decided themes that emanate from research questions (Taylor *et al.,* 1997). A framework for analysis is therefore considered to be a structured and systematic approach to reviewing data (*cf.* Taylor et al., 2017).

In Chapter 1 of this study, I discussed how a document analysis was done to systematically analyse the content that I found in written documents (*cf*. 1.6.3.2). This analysis was done by making use of open coding, which enabled me to identify broad topics from the gathered data. These topics were derived from the discussions of anthropocentrism in Chapter 2, ecocentrism in Chapter 3 and ecojustice and African communitarianism in Chapter 4. From the identified topics that I identified, I was able to group them into specific themes, and create a table or framework for analysis (*cf.* Appendix A). I then used theoretical coding to determine the extent to which the specific identified themes are reflected in the *Constitution of the Republic of South Africa* (Act 108 of 1996), the *National Environmental Management Act* (Act 107 of 1998) and the *Curriculum and Assessment Policy Statements* for Natural Sciences (Grade 7-9)(2014). Theoretic coding therefore enabled me to create a coherent narrative on the potential of the South African curriculum statements to promote more-than-human communal relationships (*cf*. 1.6.3.2). Creating a coherent narrative was dependent on the questions that I designed. These questions were designed from an ecojustice perspective; after which they were grouped according to the identified themes.

I identified three central themes, namely human-related relationships in the more-than-human world (*cf.* 5.5.1.1; 5.5.2.1; 5.5.3.1), sustainable and democratic practices in a more-than-human world (*cf*. 5.5.1.2; 5.5.2.2; 5.5.3.2), and the values framed by African communitarianism (*cf*. 5.5.1.3; 5.5.2.3; 5.5.3.3). These were discussed in relation to the *Constitution* (1996), the NEMA (1998) and the CAPS (2014). When discussing human-related relationships in a more-than-human world, the discussions mainly related to my findings on anthropocentrism, and the effects it has on the more-than-human (*cf.* 5.5.1.1; 5.5.2.1; 5.5.3.1). My deliberation on sustainable and democratic practices in a more-than-human world centred on the impact of ecocentrism and ecojustice on the more-than-human (*cf*. 5.5.1.2; 5.5.2.2; 5.5.3.2). In considering values

framed by African communitarianism, I discussed *ubuntu* and *ukama* as values reflected in African communitarianism, and its influence on the relationship between humans and the more-than-human (*cf*. 5.5.1.3; 5.5.2.3; 5.5.3.3).

The above-mentioned themes guided my findings and discussions, and enabled me to determine the potential of South African curriculum statements to promote more-than-human communal relationships (*cf.* 1.3).

5.5. FINDINGS AND DISCUSSIONS: DOCUMENT ANALYSIS

In this section, I outlined the conclusions drawn from the document analysis conducted in the previous sections (*cf*. 5.2). As previously stated, the *Curriculum and Assessment Policy Statements* (2014) draws its mandate from preceding laws and policies (*cf*. 5.2.1; 5.2.2). I analysed the *Constitution* (1996) and the NEMA (1998) in the light of the identified themes. This was done to explore the potential of CAPS for *Natural Sciences Grade 7-9* (2014) to promote more-than-human communal relationships from an ecojustice perspective (*cf.* 1.3). The findings, together with a discussion of these findings, are presented below.

5.5.1. FINDINGS AND DISCUSSIONS OF THE CONSTITUTION OF THE REPUBLIC OF SOUTH AFRICA (ACT 108 OF 1996)

The *Constitution* (1996) is considered to be the supreme law of South Africa. The *Constitution* (1996) requires the government to protect the constitutionally guaranteed social, economic, and environmental rights of its citizens (*cf*. 5.2.1). As such, all other laws and policies have to be consistent with the *Constitution*, which means that no person or entity is allowed to act in ways that contradict the *Constitution* (1996). With this in mind, I analysed the *Constitution* (1996) to determine the extent to which *CAPS for Natural Sciences Grade 7-9* (2014) promotes more-than-human communal relationships.

5.5.1.1. HUMAN-RELATED RELATIONSHIPS IN A MORE-THAN-HUMAN WORLD

The environment and humanity are interrelated, and constantly affect one another (*cf*. 2.5). Complex interrelationships exist between these entities, as a result of human influence on nature, and vice versa. These relationships are influenced by human perceptions of nature, external factors that shape human perspectives on nature, and

human responses to these perspectives (*cf.* 2.5). From an anthropocentric view, entities other than humans are considered to be only instrumentally valuable (*cf.* 2.4). The more-than-human is, in other words, only considered to be valuable to humans when it can be used by humans. Anthropocentric worldviews lead to the intentional or unintentional destruction of the environment (*cf.* 2.4). Environmental destruction means that environmental resources are depleted to such an extent that it affects the quality of soil, water, and air, impacts the well-being and health of humans (*cf.* 2.2.3).

According to the *Constitution* (1996), everyone has the right to "an environment that is not harmful to their health or wellbeing", and the right to an environment that is protected from "pollution and ecological degradation" (RSA, 1996: 9). The *Constitution* (1996) indicates that every person in South Africa has the right to an environment that is conducive to their health that is free from deterioration, and that these rights will be protected. In Schedule 4 of the *Constitution* (1996), functional areas, or legislative competencies, are stipulated in terms of the management of central and provincial governments (*cf*. 5.5.2). In conjunction with Schedule 4, the objective of local government, as set out in Section 152 of the *Constitution* (RSA, 1996: 74) further aim "to promote a safe and healthy environment". It can therefore be argued that the *Constitution* (1996) is reflective of precautionary measures aimed at safeguarding the environment for the people of South Africa. The environmental rights of people must, by implication, be protected in order to secure their health and well-being (*cf*. 5.2.1.1.2). In attempting to ensure that people's environmental rights are protected, the expectation exists that ecological problems will be addressed through the implementation of the *Constitution* (1996), and that the destruction of the environment will be limited in order to promote people's constitutional rights (*cf*. 5.2.1.1). It can therefore be said that the protection of environmental rights, as set out by the *Constitution* (1996), primarily pertains to ensuring that the needs of the people are met. It is because of this notion that it can be argued that human needs are prioritised over the needs of other entities. This causes an unbalanced relationship between humans and the more-than-human, which is indicative of anthropocentrism (*cf.* 1.6.1). It can therefore be argued that the *Constitution* (1996) is indicative of anthropocentrism.

The *Constitution* (1996) further states that national legislation is responsible for "the protection of the environment" (RSA, 1996: 72). This, by implication, means that the

environment will be safeguarded through the *Constitution* (1996). However, the *Constitution* (1996) makes no reference(s) to environmental remediation processes, if the natural environment were to suffer damage due to it not being protected. From an ecojustice perspective, regenerative systems are crucial for restoring environmental commons and damage that has been done to the environment (cf. 3.4.1). This is because of the ability of regenerative practices to (re)establish a relationship between humans and the more-than-human (*cf*. 3.4.1). Regardless of the advantages of regenerative practices, not only for the more-than-human but also for humans, no direct mention is made of it in the *Constitution* (1996). This leads me to believe that regenerative practices pertaining to the more-than-human are not prioritised in the same way(s) as it is when it comes to humans. This is because both cultural and environmental commons have to be restored in order to renew the relationship between humans and the more-than-human (*cf*. 3.4.1). It seems as if the *Constitution* (1996) places more emphasis on cultural than on environmental commons.

When human needs are considered to be more important than those of any other living, non-living, non-human entities, it is because of anthropocentric perceptions of the more-than-human. This can be ascribed to the way in which the environment is viewed (*cf*. 2.2.1). The *Constitution* (1996) views the environment as merely a place that contains natural resources and wildlife (*cf*. 2.2.1; 5.2.1.1). The problem with this view is that the more-than-human is considered to be inferior to humans. This means that human needs and interests are prioritised over the needs and interests of the more-than-human (*cf*. 2.2.3).

5.5.1.2. SUSTAINABLE AND DEMOCRATIC PRACTICES IN A MORE-THAN-HUMAN WORLD

Sustainable and democratic practices in a more-than-human world is concerned with the interaction between humans and the more-than-human (*cf*. 3.4.5). When considering sustainable and democratic practices in a more-than-human world, I explored the *Constitution's* (1996) stance on the interaction between humans and the more-than-human.

From an ecojustice perspective, it is thought that education has the potential to bring together democracy and ecology (*cf*. 2.4). This, more specifically, pertains to ecojustice education. Ecojustice education combines teachings on democracy and

ecology, and therefore has the ability to improve the quality of life for humans and the more-than-human (*cf*. 3.4.5). But, in order to do so, sustainable and democratic communities have to be established and sustained (*cf*. 4.4). Here, it is imperative that community-based learning takes place, to educate individuals on their ethical responsibilities toward the community, and to ensure that different entities are able to co-exist in harmonious ways (*cf.* 3.4.1). It can therefore be argued that community-based learning can be used to promote sustainable and democratic practices within the places that we, as humans, cohabit. In doing so, more-than-human communal relationships can also be nurtured (*cf.* 3.4.1).

Within the *Constitution* (RSA, 1996: 9), sustainability is reflected in the legislative measures that can be implemented to "secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development". In my view, this statement is indicative of a document that indirectly encourages anthropocentrism whilst trying to promote sustainability (*cf*. 2.4). I say this because in advocating for sustainable development, the protection of natural resources is justified if it is used to further economic and social development (*cf*. 3.2.3.1). The United Nation's (2023) Sustainable Development Goals (Global Goals) pertain to the ways in which individuals can develop social, emotional, cognitive and communication skills to positively impact their communities and strengthen human-environment relationships (*cf*. 2.4). When comparing the stance of the *Constitution* (1996) on sustainable development with that of the Sustainable Development Goals of the United Nations (2023), it can be argued that sustainable development in the *Constitution* (1996) is for the sake of the well-being of humans, whereas the Sustainable Development Goals of the United Nations are also for the sake of the well-being of the environment.

5.5.1.3. VALUES FRAMED BY AFRICAN COMMUNITARIANISM

It is said that communities that are guided by legislation and policies that reflect sustainable and democratic practices, promote human-environment relations within such communities (*cf.* 3.4.1). When legislation and policies reflect values that are framed from African communitarianism, the relationship between humans and the more-than-human can be further strengthened. African communitarian values, by

implication, play an important part in these interrelationships, and are therefore discussed in this section.

Chapter 1 of the *Constitution* (1996) sets out its founding provisions (*cf*. 5.2.1.1). These founding provisions are based on specific values that include human dignity, equality, and freedom (RSA, 1996). The *Constitution* (1996) makes provision for the acknowledgement of cultural variations in order to preserve dignity, equality, and freedom (RSA, 1996). This is reflected in Sections 9, 30 and 31 of the *Constitution*'s *Bill of Rights*. In these sections it is stated that the government "may not unfairly discriminate directly or indirectly against anyone on one or more grounds, including race, gender, sex, pregnancy, marital status, ethnic or social origin, colour, sexual orientation, age, disability, religion, conscience, belief, culture, language and birth" (RSA, 1996: 6); that "[e]veryone has the right to use the language and to participate in the cultural life of their choice" (RSA, 1996: 13) and that "[p]ersons belonging to a cultural, religious or linguistic community may not be denied the right, with other members of that community to enjoy their culture, practise their religion and use their language" (RSA, 1996: 13). According to the *Bill of Rights*, all cultures, and the cultural life that the people of South Africa choose to live, must be respected (*cf*. 5.2.1.1). A respect for culture and cultural differences forms part of the values of communitarianism (*cf*. 4.2), and as such it can be argued that the *Constitution* (1996) is reflective of communitarian values (*cf.* 4.2). This can be ascribed to communitarianism that takes into account the context of a community's customs and has a cultural awareness of a particular community (*cf.* 4.2).

Communitarianism, therefore, centres on the connections that exist between individuals and the community, and views both parties as equally important (*cf*. 4.2). Communitarianism is similar to African communitarianism in that African communitarianism also regards the individual to be as important as the community (*cf.* 4.3). However, the values of African communitarianism are deeply rooted in the lifestyle of African communities (*cf*. 4.3). These values include religious ideologies, morality, the common good, goodwill, *ubuntu,* and *ukama* (*cf*. 4.3). All these values centre on the importance of the interrelationships and interconnections that exist between humans and the more-than-human (*cf*. 4.3).

In my view that the *Constitution* (1996) protects African communitarianism values such as religious ideologies and morality, because the people of South Africa cannot be discriminated against on the basis of their culture or religious beliefs.

However, the only reference in the *Constitution* (1996) to the common good and goodwill, has to do with the quality of governance and commodities. From a communitarian view, the common good refers to a moral superiority towards that which is beneficial to the community as a whole (*cf.* 4.2). Goodwill refers to actions that are good, and doing the right things (*cf.* 4.3). It can therefore be said that performing good acts towards others, as well as choosing to do things that are ethical towards others, form part of the notion of goodwill. When it comes to *ubuntu* and *ukama*, no direct reference(s) is made to these values. However, *ubuntu* as a value is based on principles that include dignity and respect (*cf*.4.3), and it is my contention that the founding principles, as well as the *Bill of Rights* of the *Constitution* (1996), are reflective of such principles (*cf*. 5.2.1.1).

5.5.2. FINDINGS AND DISCUSSIONS OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT (ACT 107 OF 1998)

To fulfil its commitment to environmental protection, the South African government developed designated environmental legislation (*cf*. 5.2.1.1). The *National Environmental Management Act* (Act 107 of 1998) is responsible for carrying out this commitment. Constitutionally recognised environmental rights (*cf*. 5.3.1.1) are therefore found in the NEMA (1998). The right of South African citizens to live in environments that support their health and well-being, as well as environments that can be protected for future generations, is covered by these rights (*cf.* 5.2.1.1). The NEMA (1998) offers information on practical measures that can be taken to protect the environmental rights of the people living in South Africa (*cf*. 5.3.1.1). I therefore also analysed the NEMA (1998) pertaining to human-related relationships in a more-than-human world, sustainable and democratic practises in a more-than-human world, and values framed by African communitarianism.

5.5.2.1. HUMAN-RELATED RELATIONSHIPS IN A MORE-THAN-HUMAN WORLD

From an anthropocentric view, the perception exists that humans and human needs can be prioritised over non-human and non-living entities because of the superiority of human needs and interests (*cf*. 2.2.1). When this notion is compared to the principles

upon which the NEMA (1998) is based, it initially seems that similarities exist between anthropocentrism and the NEMA (1998) (*cf*. 2.4). In terms of environmental management, the NEMA (RSA, 1998: 10) states that "[e]nvironmental management must place people and their needs at the forefront of its concern, and serve their physical, psychological, developmental, cultural and social interests equitably". This, by implication, means that environmental management, as set out by the NEMA (1998), is intended to meet the physical, psychological, developmental, cultural, and social needs of humans (*cf.* 5.2.2). However, the NEMA (RSA, 1998: 10) further states that "[d]evelopment must be socially, environmentally and economically sustainable". When taking into consideration the stipulations that are prescribed by the NEMA (1998) with regard to development, it can be said that the NEMA (1998) is reflective of ecocentric and ecojustice values (*cf.* 3.4.2).

The difference here, when compared to the *Constitution* (1996), is that the *Constitution* (1996) encourages the use of natural resources to secure ecologically sustainable development (*cf.* 5.5.1.2), whereas the NEMA (1998) encourages social, environmental and economical sustainability as a way to manage the environment. I am therefore of the opinion that the NEMA (1998) makes more of an effort towards environmental remediation than the *Constitution* (1996). This notion is further strengthened by the NEMA's (1998) response to environmental destruction, in keeping those responsible for the damage that is done to the environment in check. As the NEMA (1998) considers environmental compliance, enforcement and protection to be important, it holds individuals and institutions accountable for the damage that is done to the environment (*cf*. 5.2.2). The NEMA states that "[t]he costs of remedying pollution, environmental deterioration, consequent adverse health effects and/or preventing, controlling or minimising further pollution, environmental damage or adverse health effects must be paid for by those responsible for harming the environment" (RSA, 1998: 14). It can therefore be said that those who make themselves guilty of environmental damage, are held liable and are expected to reimburse the government for damages (*cf*. 5.2.2). Keeping offenders accountable for their actions is particularly significant, as equal access to environmental resources is seen as a means of advancing human moral accountability. It also plays a significant role in the ethical development of a society (*cf.* 3.4.1).

The human relationships with the more-than-human, as reflected by the NEMA (1998), indicate an appreciation and care for the more-than-human (*cf*. 5.2.2). The NEMA (1998) is, in my opinion, based on ecocentric values. This is evident from the value that is ascribed to the more-than-human, and the protection of the more-than-human through legislation (*cf.* 5.2.2). It can therefore be argued that the NEMA (1998) considers the more-than-human to be rights-holders that also warrant care and protection, just like humans (*cf*. 3.2.1). It is also my contention that the NEMA (1998) has the ability to improve the relationship between humans and the more-than-human because of the vocabulary it uses. The vocabulary of the NEMA (1998) is indicative of a care for, and safeguarding of, the more-than-human (*cf.* 3.4.1). This is because the NEMA (1998) uses vocabulary that encourages the protection of the environment and sustainable development, when utilising language such as “the protection of the environment” (RSA, 1998: 10), and “the disturbance of ecosystems and loss of biological diversity are avoided” (RSA, 1998: 11). This kind of vocabulary has the ability to affect root metaphors, which is not only one of the goals of ecojustice education, but also one of the ways in which a shift from an anthropocentric to an ecocentric worldview can be achieved (*cf*. 3.4.3). This is because language can create a specific narrative that is passed down from one generation to the next. It is therefore crucial that root metaphors, especially root metaphors created in education, are indicative of ecocentric values (*cf*. 3.4.3). As a consequence, root metaphors in education that are predominantly ecocentric in nature, can create a shift from an anthropocentric to ecocentric worldview. Such a shift is pivotal for attempts to halt environmental destruction (*cf*. 3.4.1).

5.5.2.2. SUSTAINABLE AND DEMOCRATIC PRACTICES IN A MORE-THAN-HUMAN WORLD

In this section I explored the extent to which sustainable and democratic practices are reflected in the NEMA (1998). Sustainable and democratic practices in a more-than-human world refer to the influence that ecocentrism and ecojustice has on the more-than-human (*cf*. 5.5.1.2). In order to promote sustainable and democratic practices, a shift from an anthropocentric worldview to an ecocentric worldview is imperative. This is because of the ability of ecocentric perceptions of the more-than-human to minimise the environmental destruction caused by humans. This is possible because of the

foundation upon which ecocentrism is based. Ecocentrism is centred on a respect for all living things in the natural world, not just humans (*cf*. 2.6).

According to the NEMA (RSA, 1998: 2), “sustainable development requires the integration of social, economic and environmental factors in the planning. implementation and evaluation of decisions to ensure that development serves present and future generations”. Sustainable practices mean that the demands of present and future generations are met, and that the resources and services used can be utilised without jeopardising the stability of the ecosystems that supply them (*cf.* 2.4). Sustainable practices are therefore needed in order for the more-than-human to thrive (*cf*. 3.2.3.2). In my view, sustainability, and therefore also the needs of the more-than-human, are encouraged in the NEMA (1998). This view was reinforced by the environmental implementation plans and environmental management plans of the NEMA (1998), which state that their purpose is to “co-ordinate and harmonise the environmental policies, plans, programmed and decisions of the various national departments that exercise functions that may affect the environment or are entrusted with powers and duties aimed at the achievement promotion and protection of a sustainable environment”. It can therefore be argued that the NEMA (1998) has the authority to influence the policies and plans of national departments in the country that relate to the environment, so that a sustainable environment can be nurtured.

According to the NEMA (RSA, 1998: 50), its compliance, enforcement and protection regulations “are reasonable and justifiable in an open and democratic society based on human dignity, equality and freedom”. It can thereby be said that the regulations of the NEMA (1998) are aligned with the values of the *Constitution* (1996) (*cf*. 5.3.1.1). By implication, the NEMA (1998) promotes democratic practices in terms of how the more-than-human is treated. Democratic practices are also reflected in earth democracies (*cf*. 3.4.2.2). Earth democracies refer to decision-making practices that intend to renew resources from natural systems (*cf*. 3.4.2.2). The renewal of natural resources is promoted so that the environment can prosper, and so that fairness is encouraged within communities (*cf*. 3.4.2.2). In my opinion, the NEMA (1998) allows for earth democracies to be promoted. By implication, the implementation of democratic practices can lead to the development of sustainability practices (*cf*. 5.6.1.2).

It is therefore my contention that the NEMA (1998) encourages sustainable and democratic practices in a more-than-human world. In the next section, the NEMA (1998) is explored in the light of values framed by African communitarianism.

5.5.2.3. VALUES FRAMED BY AFRICAN COMMUNITARIANISM

Within the African culture and communities, specific values lie deeply rooted. Among these values are religious ideologies, morality, the common good, goodwill, *ubuntu* and *ukama* (*cf*. 4.3; 5.5.1.3). These values are framed by African communitarianism (*cf*. 4.4). The *Constitution* (1996) states that all people have the right to participate in the cultural life of their choosing, and as a consequence protects the cultural rights of all the people of South Africa by (*cf*. 5.5.1.3). This cultural right enables all members of society to enjoy the culture, religion and language of their choice (cf. 5.5.1.3). It can therefore be said the *Constitution* (1996) not only represents a respect for different cultures, religions and languages in safeguarding cultural rights, but it is also reflective of African communitarian values. Based on the premise that cultural diversity exists throughout the world, and that such diversity shapes and reflects the worldviews of individuals (*cf*. 3.4.1) within those cultures, it can be argued that these perspectives also have various effects on the environment (*cf*. 4.3). Because of this, the relationships between the environment, culture, and education are distinct and varied in types kinds of ecological and cultural interactions they generate (*cf*. 2.4). It can therefore be argued that cultural factors affect education, and also the current ecological issues facing the planet (*cf*. 4.3).

According to the National Environmental Management Principles on which the NEMA (RSA, 1998: 12) is based, environmental management is an integrated approach (*cf.* 5.2.2) that acknowledges that “all elements of the environment are linked and interrelated, and it must take into account the effects of decisions on all aspects of the environment”. By implication, every component of the environment is interconnected, and all decisions must therefore consider how they will affect the environment. It is further stated that “[e]nvironmental justice must be pursued so that adverse environmental impacts shall not be distributed” (NEMA, 1998: 2). This means that by putting in place different laws, rules, and policies to protect the environment, justice for the environment can be encouraged (*cf*. 3.2.3.2). One can argue that *ubuntu* and *ukama* are two of the values of African communitarianism that are reflected by the

NEMA (1998). This comes as *ubuntu* centres on the notion of humanness, and comprises values such as kindness, respect, and dignity, which are extended to humans and the more-than-human world (*cf.* 4.3). *Ukama* focuses on the acknowledgement of the interconnectedness between humans and the more-than-human (*cf.* 4.3). *Ubuntu* and *ukama,* as African communitarian values, are similar to the values that are upheld throughout the NEMA (1998). It is therefore my contention that the values of African communitarianism are reflected in the National Environmental Management Principles on which the NEMA (1998) is based.

5.6. FINDINGS AND DISCUSSIONS: POLICY ANALYSIS

In this section, I outline the conclusions drawn from the analysis of CAPS (2014) (*cf.* 5.3.1.2). CAPS (2014) was analysed in the light of the identified themes, namely human-related relationships in a more-than-human world, sustainable and democratic practices in a more-than-human world, and values framed by African communitarianism. This was done in order to explore the potential of CAPS (2014) for *Natural Sciences Grade 7-9* to promote more-than-human communal relationships from an ecojustice perspective (*cf*. 1.3). In the next section, the findings and their discussion are presented.

5.6.1. THE POLICY AND ASSESSMENT POLICY STATEMENTS FOR NATURAL SCIENCES GRADE 7-9 (2014)

The *National Curriculum Statement Grades R-12* is responsible for providing learners with meaningful knowledge, skills and values that they can apply to their personal lives. This knowledge, skills and values are imperative for achieving the aims of the *National Curriculum Statement Grades R-12* (CAPS, 2014). The aim of CAPS for *Natural Sciences Grade 7-9* is that this subject will give learners the opportunity to reconcile their conceptions of nature. The CAPS for *Natural Sciences Grade 7-9* (2014) was analysed in the light of the identified themes, in order to ultimately answer the research question (cf. 1.3).

5.6.1.1. HUMAN-RELATED RELATIONSHIPS IN A MORE-THAN-HUMAN WORLD

The type of relationships that humans have with the more-than-human world, is dependent on an individual's view of the world (*cf*. 2.5). These worldviews are responsible for manifesting specific attitudes, values and practices towards the more-than-human (*cf*. 2.5). Education and education policies are also reflective of specific

views, values, and behaviours (*cf*. 2.4). It can therefore be said that worldviews affect education and education policies, and vice versa. From an ecojustice perspective, worldviews that are anthropocentric in nature cause grave destruction to the more-than-human (*cf.* 2.3). However, a shift from an anthropocentric to an ecocentric worldview is possible if environmental damage is acknowledged and acted on (*cf*. 3.3). This is because when we, as human, change the way we think about the more-than-human, our interactions with the more-than-human also change, and so too do our relationship with the more-than-human (*cf.* 3.4.1).

Within the CAPS (2014), educational content is carefully selected, and a variety of teaching and learning approaches is used in Sciences (*cf*. 2.5.2). This is done in order to advance knowledge of "the contribution of Science to social justice and societal development; the need for using scientific knowledge responsibly in the interest of ourselves, of society and the environment; the practical and ethical consequences of decisions based on Science" (CAPS, 2014: 9). In my view, the intention of the selection of educational content for *Natural Sciences* is to strengthen the relationship between humans and the more-than-human. This is due to the combination of teachings on science systems and ecology, which allows for a profound appreciation for the environment to be nurtured (*cf*. 2.5.2). In the Natural Sciences classroom, provision is made for "evaluating the impact of various factors (such as loss of habitat, loss of species, change of weather or climate) on ecosystems" (CAPS, 2014: 38). By implication, the importance of maintaining a balance within ecosystems and the conservation of ecosystems, is taught in the curriculum (CAPS, 2014). This is significant, as the remediation of the environment is dependent on first determining the extent of the environmental damage that has occurred, and then moving towards possible interventions (*cf.* 2.4). In encouraging interventions to address environmental damage, it can be argued that the CAPS (2014) acknowledges the intrinsic value of ecological systems, and therefore aims to encourage its preservation. In my view, aiming to preserve the more-than-human is suggestive of ecocentrism, which implies that the CAPS (2014) is ecocentric in nature (*cf*. 3.2.2).

In determining what environmental damage is, and which restorative practices are needed to repair such damage, it is necessary to take note of environmental issues, as well as the social injustices they cause (*cf*. 4.2). This is because environmental issues and social injustices are interrelated (*cf*. 3.4.1; 4.2). Environmental issues stem

from increased and unsustainable resource use, and include climate change, deforestation, overfishing, and water pollution. Social injustices refer to imbalances that exist within societies that lead to inequality, poverty and exploitation (*cf.* 4.2). Because environmental issues and social injustice issues are considered to be interrelated, it can be argued that the relationship between humans and the more-than-human world is determined by the environmental and social injustices that they experience (*cf*. 3.4.1). When this interconnectedness is acknowledged, it assists people in understanding that human thought and behaviour must change in order to have a beneficial impact on the environment (*cf*. 3.4.2). The *Constitution* (1996) considers its aim, to establish a society that is indicative of social justice, to be an integral part of upholding its constitutional commitment to the people of South Africa (*cf*. 5.2.1.1). It is therefore my contention that in addressing social justice issues like inequality, poverty and exploitation (*cf*. 4.2), environmental issues can also be addressed. Both environmental issues and social injustices need to be addressed in order to improve the relationships that exist between humans and the more-than-human world (*cf*. 4.2).

5.6.1.2. SUSTAINABLE AND DEMOCRATIC PRACTICES IN A MORE-THAN-HUMAN WORLD

Sustainable and democratic practices in a more-than-human world refer to the impact that ecocentrism and ecojustice has on the more-than-human (*cf.* 5.5.1.2). In this section, I discussed the ways in which sustainable and democratic behaviours are reflected in the CAPS (2014).

According to the CAPS (2014), the subject Natural Sciences has the ability to promote sustainable and democratic practices by developing learners' cognitive and practical processing skills (*cf*. 5.5.2.2.). One of these skills is to identify problems and issues that enables learners to "articulate the needs and wants of people in society" (CAPS, 2014: 11). This is significant, as sustainable connections between natural environments and human society form the basis of the relationship(s) that exist between humans and the more-than-human (*cf.* 2.2.2). In order to improve the relationship(s) between humans and the more-than-human, changes need to be made to the anthropocentric ways in which environmental problems are viewed (*cf.* 2.4). This can be done through education (*cf.* 2.5), as education can be used as a tool to create a shift from an anthropocentric worldview to an ecocentric worldview (*cf.* 3.3). Here,

ecocentric teaching and learning methods are imperative, and need to be reflective of sustainable practices in order to create such a shift (*cf*. 3.2.3). To promote sustainability, democratic practices have to be encouraged and be reflective of earth democracies, which are decision-making procedures that aim to replenish resources from natural systems (*cf*. 5.2.2). It can thereby be said that ecocentric teaching and learning is reflected in environmental education and ecojustice education, because it allows learners to gain a deep understanding of their environmental responsibilities (*cf.* 3.2.3).

But if ecojustice education, and sustainability, were to be promoted, the importance of the role of educators must be acknowledged (*cf.* 3.4.1). In terms of democratic practices, the CAPS (2014: 16) for Natural Sciences gives teachers “the freedom to expand concepts and to design and organise learning experiences according to their own local circumstances”. The CAPS (2014), by implication, allows teachers to use their discretion, and adapt teaching and learning practices in order to make learners’ educational experiences more context-specific. It is therefore crucial that educators are able to relate educational experiences to learner-specific contexts. This is important for ecojustice education, as it can change learners’ perspectives of both themselves and the more-than-human, and also nurture sustainable practices (*cf.* 3.4.1). Furthermore, sustainable practices are promoted by the NEMA (1998), which aims to raise environmental awareness through the implementation of environmental education (*cf.* 5.3.1.1). This is because environmental education has the potential to improve learners' problem-solving abilities, while also changing their perspectives on sustainability (*cf*. 5.2.2). The inclusion of sustainability in school curricula has the potential to improve the connection between humans and non-humans (*cf*. 5.2.2).

The second aim of Natural Sciences is to know the subject content, and to make connections (*cf*. 5.2.1.1.2). Here, the goal is for learners to be able to use their understanding of science, technology, and the environment in new ways, in order to help them to develop a mental model of information and foster links between ideas and concepts (CAPS, 2014). It is therefore my view that the aims of CAPS (2014) promotes ecojustice and sustainability (*cf*. 3.4.1). This comes as ecojustice education teaches learners about different worldviews and ethics, and the emphasis placed on the interdependence of environment and human societies (*cf*. 3.2.3.1).

It can be argued that the aims of the NEMA (1998) can be realised through the implementation of the CAPS (2014) for *Natural Sciences Grade 7-9*. This is because of the careful selection of educational content that highlights the "contribution of Science to social justice and societal development" (CAPS, 2014: 9). Social justice involves the preservation of a person's social rights, which includes a person's right to education, and can contribute to societies that ascribe intrinsic value to the more-than-human world (*cf*. 3.2.3.2). In recognising the intrinsic value of the more-than-human, the goals of ecojustice can also be met (*cf*. 3.1). Promoting ecojustice is necessary to protect economic and social rights (*cf.* 3.4.3). This is because social justice concerns and ecological prosperity are interconnected, and people and communities are dependent on larger ecological systems for survival (*cf*. 1.5). The interrelatedness of issues such as social justice and ecological systems, are reflected in the CAPS (2014). CAPS (2014) indicates that it "prepares learners for active participation in a democratic society that values human rights and promotes responsibility towards the environment. Natural Sciences can also prepare learners for economic activity and self-expression" (CAPS, 2014: 9). The CAPS (2014) for *Natural Sciences Grade 7-9* therefore prepares learners for a society that values the rights of humans as well as the rights of the more-than-human. In the value it ascribes to the more-than-human, the CAPS (2014) is similar to ecojustice.

It is therefore my view that the CAPS (2014) is reflective of encouraging democratic practices, sustainability, social justice, and ecojustice, and because of this, it has the ability to promote sustainable and democratic practices in education.

5.6.1.3. VALUES FRAMED BY AFRICAN COMMUNITARIANISM

The *National Curriculum Statement Grades R-12* is based on the promotion of certain principles. These principles include "[h]uman rights, inclusivity, environmental and social justice" and "[v]aluing indigenous knowledge systems" (CAPS, 2014: 5). It can therefore be said that the South African school curriculum includes values pertaining to environmental, social, and human rights, as outlined in the *Constitution* (1996) (*cf*. 5.2.1.1).

In ascribing value to indigenous knowledge systems, South Africa's rich history and traditions are also acknowledged as key contributions to developing the principles outlined in the *Constitution* (1996) (*cf*. 5.2.2.1). Exposing learners to indigenous

knowledge is also considered to be one of the ways in which earth democracies can be enhanced. Earth democracies involve decision-making processes where decisions are made in the best interest of the environment and pertain to the renewal of resources (*cf.* 3.4.2.2). Enhancing earth democracies results in communities that value the more-than-human, which are able to live in harmony with their environments (*cf*. 3.4.2.2.). It can therefore be argued that earth democracies are reflective of democratic practises, and encourage sustainability, and are encouraged in the CAPS (2014).

In my view, indigenous knowledge is explored in the CAPS (2014) for Natural Sciences, because it is stated that "[e]xamples of indigenous knowledge that teachers select for study should, as far as possible, reflect different South African cultural groupings. They should also link directly to specific content in the *Natural Sciences* curriculum" (CAPS, 2014: 16). This, by implication, means that teachers are able to incorporate indigenous knowledge into the curriculum. If this is done, it should also include teachings on a diversity of cultural groups, and it should be incorporated with knowledge on natural sciences.

I found that the CAPS (2014) for Natural Sciences is indicative of ecojustice (*cf*. 5.6.1.2). It can be said that Natural Sciences, like ecojustice, aspires to create sustainable and democratic communities, and therefore upholds the principles of equality, fairness and justice, on which the *Constitution* (1996) is based (*cf*. 5.2.1.1.1). Sustainable and democratic communities are created when the interconnection of all entities within a community are recognised and respected, and as a result can peacefully co-exist (cf. 1.1). Communities that are sustainable and democratic, are reflective of different entities living together in harmony (*cf*. 3.4.1). This is significant, as harmony is one of the values that are reflected in both *ubuntu* and *ukama,* and forms part of African communitarianism (*cf*. 4.3). It can therefore be said that African communitarianism and the values it represents, intends for people to live together in harmony so that their communities can prosper (*cf*. 4.3). From an ecojustice education perspective, promoting harmonious relationships is possible through community-based learning (*cf*. 3.4.1). The importance of community-based learning is also noted in the CAPS (2014), by the reference it makes to the aims of the South African curriculum, which states that the curriculum "promotes knowledge in local contexts" (CAPS, 2014: 4). This, by implication, means that because community-based

education takes place in familiar settings, it raises awareness among learners of the skills and attitudes needed to support their communities. Because community-based education (cf. 3.4.5) empowers learners to recognise the assets that exist within environmental and cultural commons (*cf*. 3.4.2), and to utilise those resources as a means to advance sustainable communities, it can be argued that the CAPS (2014) is reflective of ecojustice and African communitarianism (*cf.* 3.4.1)

It can also then be said that the CAPS (2014) is reflective of ecojustice and embodies African communitarian values, and allows for the acknowledgement of the interconnectedness and the interdependence of humans and the more-than-human world. This acknowledgement, in turn, has the potential to build communal relationships, and in doing so also improving environmental conditions by fostering sustainability (*cf*. 4.3).

5.7. SUMMARY

In this chapter, I conducted a qualitative analysis that involved the analysis of two documents, namely the *Constitution* (1996) and the NEMA (1998). After analysing these documents I then conducted a policy analysis of the CAPS (2014) for *Natural Sciences Grade 7-9.*

The *Constitution* (1996) is the superior law that exists in South Africa, which means that is the standard against which all other laws are judged in order to preserve the rights of South Africans and clarify their obligations (*cf*. 5.2.1.1). To make sure that the rights and obligations of South Africans are preserved, the *Constitution* (1996) is reflective of values which include human dignity, non-racism and non-sexism (*cf.* 5.2.1.1). Applicable to this study are the environmental rights and educational rights stated in the *Constitution* (1996). Environmental rights pertain to the right of people to have access to an environment that is safe, and not hazardous to their health or well-being (cf. 5.2.1.1.1). It can therefore be said that the *Constitution* (1996) puts legislative measures into place to avoid pollution and harm to the environment, to encourage conservation, to ensure environmentally sustainable development and to utilise natural resources, while encouraging economic and social development (*cf.* 5.2.1.1.1). With regard to education, the *Constitution* (1996) ensures the right to basic and further education (cf. 5.2.1.1.2). In order to be enforced, these rights are

considered in relation to the educational goals reflected in documents such as the SASA (1996), the NEMA (1998) and the CAPS (2014) (*cf*. 5.2.1.1.2).

As many South Africans are exposed to environments that are detrimental to their health and well-being (cf. 5.3.1.1), environmental laws such as the NEMA (1998), uphold the South African government's commitment to protect the environment and the environmental rights of its people, as indicated in the *Constitution* (1996) (*cf.* 5.2.1.1; 5.2.2). The NEMA (1998) consists of environmental management and implementation guidelines that ensure that conducive environmental decisions are taken (*cf.* 5.2.2.1). These guidelines allow for appropriate decisions to be taken with regard to the ways in which environmental resources can be used to serve the public interest, while being protected (*cf*. 5.2.2.1). In order to protect environmental resources, the NEMA (1998) places an emphasis on safeguarding vulnerable ecosystems such as coastal shores, estuaries and wetlands, that form part of our common heritage (cf. 5.2.2.1). As a result, the NEMA (1998) seeks to improve the sustainability and well-being of South African communities. This is done because the NEMA (1998) promotes sustainable practices in an attempt to improve environmental consciousness through the application of environmental education (*cf.* 5.3.1.1). Environmental education is therefore mandated by the NEMA (1998) to promote sustainability and community well-being, and does this by raising awareness of environmental issues (*cf*. 5.2.2.1). A policy statement like CAPS (2014) therefore represents the government's commitment to uphold people's right to education and a protected environment (*cf.* 5.3.1.2).

An analysis of the *Constitution* (1996) and the NEMA (1998) provided me with a larger legislative framework from which to draw in order to analyse the CAPS (2014) (*cf*. 5.2.1). The CAPS (2014) is considered to be an encompassing policy framework that guides teaching and assessments in all subjects and in all teaching phases in South African public schools (*cf*. 1.11). In the CAPS of *Natural Sciences Grade 7-9* (2014), the subject content is carefully selected to combine Science with social justice and societal development (*cf.* 5.6.1.1). Combining Science, social justice and societal development means that people's social rights are protected, and that societies are created that acknowledge the intrinsic value of the more-than-human (*cf*. 3.2.3.2). The reflection of social justice, societal development, and the acknowledgement of the intrinsic value of the more-than-human, is reflective of an ecojustice perspective (cf.

3.1). The CAPS for Natural Sciences (2014) is, by implication, indicative of an ecojustice perspective, and also an embodiment of ecocentric values (*cf.* 3.2.3.2). This is imperative for improving the relationship between humans and the more-than-human (*cf.* 3.2.3.2). It can also therefore be said that the CAPS (2014) can be considered as a way to promote the relationship between humans and the more-than-human.

In the next chapter I will elucidate on my research findings and make suggestions regarding the potential of the South African curriculum policy statements to promote harmonious more-than-human relationships in education (*cf.* 1.3.5).

CHAPTER 6: COMMENTS AND SUGGESTIONS

6.1. INTRODUCTION

The aim of this study was to explore the potential of South African curriculum statements to promote more-than-human communal relationships from an ecojustice education perspective (*cf.* 1.4). The policy documents that were analysed were the *Constitution of the Republic of South Africa* (Act 108 of 1996), the *National Environmental Management Act* (Act 107 of 1998) and the *Curriculum Assessment Policy Statements for Natural Sciences Grade 7-9(2014).* Given that they offer the context for education policy and curricular modifications, the selected policies were examined. In order to provide recommendations about how South African curriculum statements promote more-than-human communal relationships, I synthesise the preceding chapters in this chapter, and present feedback on the findings of the study. At the end of the chapter, I highlights the strengths of the study, discusses its limitations that open up new research opportunities, and reflects on the difficulties I faced while conducting the study. I also explain how the study has aided in my academic and personal development.

6.2. PURPOSE OF THIS RESEARCH

In my opinion, the goal of this study has been fulfilled. My own empowerment has greatly increased as a result of conducting the research that I conducted, since it has given me a better knowledge of the ways in which curriculum can influence the relationship(s) between humans and the more-than human. I provided an informative literature review of the impact of anthropocentrism on the environment and education (*cf.* 2.3; 2.4). I also gathered information on ecocentrism, and discussed what the implications of a shift from an anthropocentric to an ecocentric worldview would entail (*cf*. 3.2; 3.3). Using the results of the literature research, I was able to develop an analytical underpinning for the South African policy statements relevant to this study. I used document analysis to examine these policy statements, and applied the policy interpretations of Samuel (2017) and Taylor *et al*. (1997). The analysis of the *Constitution of the Republic of South Africa* (Act 108 of 1996), the *National Environmental Management Act* (Act 107 of 1998), and the *Curriculum Assessment Policy Statements for Natural Sciences Grade 7-9(2014)*, led to the development of specific themes, and enabled me to create a framework for analysis (*cf.* 5.4). Many

objectives that I developed in the course of my research helped me address my study's main question. In order to demonstrate how the study accomplished its goal, I summarised Chapters 2, 3, and 4, which allowed me to evaluate the South African policy statements. I focused on the results and discussion of the document and policy analysis in Chapter 5 of the study, to examine the extent to which the South African Curriculum Statements have the ability to promote more-than-human communal relationships.

6.3. OVERVIEW OF STUDY

This section provides an overview of my study, and is guided by my research questions as well as the literature review that I conducted in Chapters 2, 3 and 4 of my study.

6.3.1. CHAPTER 2

The aim of Chapter 2 was to unpack the implications of an anthropocentric worldview for education, and the interconnectedness between humans and the more-than-human (*cf.* 1.4.1). To do this, anthropocentrism was thoroughly examined, and I reported on the results, including how it affects education and the relationship between humans and the more-than-human (*cf*. 2.1).

As anthropocentrism is based on the notion that humans are the most valuable entities that exist, it creates the perception of the superiority of humans over the more-than-human (*cf*. 2.1). My finding is that it is extremely problematic when this perception exists amongst people, due to the damaging effects that an anthropocentric worldview has on the environment (*cf*. 2.2.1). It can be said that environmental damage is caused because of the continuous and excessive ways in which humans use the earth's natural resources (*cf*. 2.2.1). Anthropocentrism, by implication, can be regarded as the driving force behind the manifestation of attitudes, values, and practices that, knowingly or unknowingly, show a disdain toward the more-than-human (*cf*. 2.1). From an anthropocentric point of view, humanity and ecology are viewed as entities that are unrelated. This is in stark contrast with an ecocentric point of view, which enables humans to acknowledge that they and the more-than-human constantly impact one another, and are therefore interdependent (*cf*. 2.5). It can therefore be said that the ways in which humans perceive themselves in relation to the more-than-human, not only impact on the environment, but also influence the relationship(s) between humans

and the more-than-human (*cf.* 2.5). As an anthropocentric and an ecocentric worldview differ in terms of the relationship(s) they foster between humans and the more-than-human, it can be argued that these worldviews have different effects on education, and are also affected differently by education (*cf.* 2.5).

One of the ways in which anthropocentrism affects education pertains to the ways in which humans perceive nature. From an anthropocentric view, the natural world and its resources are considered to be commodities that are available for humans to use as they see fit (*cf.* 2.5.1). Anthropocentric views are particularly evident in Westernised cultures. One could argue that anthropocentrism lies deeply rooted in the Westernised culture, because of the emphasis it places on economic prosperity (*cf.* 2.3). The problem, however, does not lie in the desire of (predominantly) Westernised cultures to be economically prosperous, but in the desire to be economically prosperous, regardless of the ecological and/or social crises it can lead to within communities (*cf.* 2.2.3). It can be said that the greatest ecological problem caused by anthropocentrism is climate change, and the changes in environmental conditions that it causes (*cf.* 1.1). In the modern day and age, climate change is considered to be a global problem that has led to increased international collaborations and efforts in order to minimise its effects on the planet (*cf.* 1.1). To solidify these international attempts, countries around the world, including South Africa, have become signatories to various environmental treaties. Such treaties require countries to consider binding and non-binding international environmental legislation when developing and implementing their own policies and legislation (*cf*. 1.2). In addition to the ecological problems that stem from anthropocentrism, social problems also develop from the use of natural resources, and include issues such as armed conflict, starvation and disease, which have the ability to cripple communities (*cf.* 2.3). I therefore found that ecological and social problems are often intensified as a direct or indirect result of anthropocentrism, and arise from imbalanced relationships between humans and the more-than-human. The greater the disparity that exists between humans and the more-than-human, the more damage is caused to the environment (cf. 2.3). Despite the notion of the damaging effects of anthropocentrism on the environment, I found that signs of anthropocentrism are still found in contemporary school curricula (*cf.* 2.4). This comes as data from different countries suggest that the curricula of only 53% of education systems around the world relate to environmental content (*cf*. 2.4). This leads me to believe that exposing

learners to environmental knowledge is still not a priority in many countries. Taking into consideration the extent of ecological and social issues, one would think that more educational efforts would be made in an attempt to assist in changing the damaging dynamics between humans and the more-than-human, in order for ecological and social conditions to improve. By implication, a lack of efforts to improve the relationship between humans and the more-than-human strengthens anthropocentrism, and has a damaging effect on the environment, which in turn, leads to the suffering of humans (*cf*. 2.2.1). This can also be ascribed to external factors, such as environmental attitudes, that influence human perspectives on nature (*cf.* 2.5.2).

It is therefore my contention that the anthropocentric ways in which people view the world need to change in order to build conducive interrelationships between humans and the more-than-human, and that this can be done through environmental education. This is because education is considered to be a tool that can be used to find causes and solutions to environmental issues, which can ensure that environmental conditions are improved, and the environment is safeguarded (*cf*. 2.5.1). In my view, this is possible because of the ability of education to challenge anthropocentric thinking and bring about changes in individuals' anthropocentric attitudes toward the environment (*cf*. 2.5.2). It can therefore be said that the ways in which humans respond to external influences that affect their perceptions of the environment, need to change (*cf*. 2.5.3). In order for such changes to occur, it is essential that people's anthropocentric worldviews change (*cf*. 2.5.3).

6.3.2. CHAPTER 3

The aim of Chapter 3 was to foreground the educational implications of a shift from an anthropocentric to an ecocentric worldview, for establishing a relationship between humans and the more-than-human world (*cf.* 1.4.2).

The distinction between anthropocentrism and ecocentrism can be regarded as the most important predictor of ecological attitudes within environmental thought. (*cf.* 3.1). This is because of this notion that one can argue that if environmental conditions were to improve, ecological attitudes would have to change, because only then can the relationship between humans and the more-than-human improve (*cf*. 3.2.2). From an ecocentric view, the relationship between humans and the more-than-human can change if such relationships are viewed in the light of ecocentrism. It is my view that

ecocentrism, and the relationship between humans and the more-than-human, can be promoted if there were to be a shift from an anthropocentric worldview to an ecocentric worldview. In order for such a shift to occur, people's perceptions of the more-than-human need to change (*cf.* 2.5.3). Changes in perceptions and attitudes are possible through education. But the question then arises, what would the educational implications be for the more-than-human if worldviews were to change from being anthropocentric, to being ecocentric?

It can be argued that one of the solutions to changing environmental conditions lies in changing the ways in which humans view the more-than-human. If humans continue to view the more-than-human as an infinite resource, then environmental damage will continue, and worsen (*cf*. 3.1). It is for this reason that a shift from anthropocentric views to ecocentric views is vital in safeguarding the more-than-human. When it comes to creating a shift in attitude, ecocentrism and ecojustice play an important role, and can be encouraged through education (*cf*. 2.4).

Ecocentrism is based on the view that the more-than-human has the same value as humans. Because entities such as animals, plants, and rivers are part of the ecosystem, they are also regarded as right-holders, or objects that deserve the same care as humans (*cf*. 3.1). From an ecocentric point of view, all entities on earth are thought to be philosophically significant and are therefore deserving of human acknowledgment and respect (*cf*. 3.2.1). Because ecocentrism is founded on the assumption that an ecocentric view improves the relationship between humans and the more-than-human, the expectation exists that it can also help to reduce environmental degradation (*cf*. 3.2.2). However, ecocentric perceptions do not naturally exist amongst individuals, and an ecocentric consciousness needs to be cultivated. An ecocentric consciousness can be cultivated through education if learners are taught the value of non-human and non-living entities, as well as the consequences of careless resource use (*cf.* 3.2.2). It has been argued that by implementing environmental education and ecojustice, learners can gain an in-depth understanding of their responsibilities towards the environment (*cf*. 3.2.3).

Environmental education is a process that aims to raise global awareness of, and concern for, the environment and its challenges (*cf*. 3.2.3.1). Based on this research, I found that environmental ethics are taught in environmental education, and focuses

on providing learners with a basic understanding of ecology, ecological systems, and the major ecological challenges that affect the world we live in. It also promotes an appreciation for nature (*cf.* 3.2.3.1). It is, however, important to note that the ecological challenges that are reflected in environmental education, differ from country to country (*cf.* 3.2.3.1). In many countries, including South Africa, environmental education consists of content that is ecologically orientated, emphasises the importance of sustainability, and is based on science (*cf*. 3.2.3.1; 5.3.1.2). Some academics argue that environmental education is inherently anthropocentric, as it only promotes care towards the environment because of the benefits it holds for mankind (*cf*. 3.2.3.2). But in my view, environmental education changes the ways in which humans treat the environment. It can therefore lead to strengthened relationships between humans and the more-than-human, which are indicative of caring for the more-than-human, rather than a disregard for the more-than-human. I also believe that environmental education is more reflective of ecocentric values than anthropocentric values, because of its concern for the more-than-human.

In terms of ecojustice, it pursues justice for the environment and for culture (*cf*. 3.2.3.2). It is said that an ecojustice approach to education combines the goal of achieving environmental stability with the goal of attaining social justice (*cf*. 3.2.3.2). In relation to the more-than-human, this means that entities that are considered to form part of the more-than-human world, have the same rights as humans (*cf*. 3.2.3.2). When comparing environmental education to ecojustice education, the most significant difference is that ecojustice education emphasises not only the value of the more-than-human, as with environmental education, but also the equal intrinsic value that the more-than-human holds when compared to humans (*cf*. 3.2.3.2). It is my contention that environmental education and ecojustice can be regarded as the embodiment of ecocentrism, and are needed to improve the relationship between humans and the more-than-human (*cf.* 3.2.3.2). It can therefore be said that the inclusion of environmental education and ecojustice education can cause worldviews to shift, and anthropocentric views can change to views that are more ecocentric in nature. The educational implications of a shift from an anthropocentric to an ecocentric worldview mean that ecocentric values are taught, and will become visible in changed human behaviour. Changes in human behaviour can strengthen the relationship(s)

between humans and the more-than-human, and can lead to environmental concerns being addressed.

6.3.3. CHAPTER 4

In Chapter 4, I explored the ways in which ecojustice and ecojustice education can be reconceptualised for the nurturing of more-than-human communal relationships (*cf*. 1.4.3).

Ecojustice and ecojustice education have important roles to play if a shift from anthropocentric worldviews to ecocentric worldviews are to be realised (*cf*. 2.4). Given that every element in the natural world has inherent value, one may argue that, from the standpoint of ecojustice, humans and the more-than-human should each be recognised for the value they possess (*cf.* 3.4). Ecojustice and ecojustice education therefore acknowledge the intrinsic value of all entities, not just humans. Another aspect that differentiates ecojustice pertains to sustainability. From an ecocentric point of view, promoting sustainability is good for the environment, because it allows for resources to be used sparingly and responsibly (*cf.* 3.2.3.1). But from an ecojustice perspective, it is often argued that the idea of sustainability needs to be reformed (*cf.* 3.2.3.2). Sustainable societies are believed to be those that recognise that natural systems are incapable of self-regenerating. In order to maintain communities, human participation is therefore required. Sustainable community development is thought to be a local notion, whereas sustainable development is thought to be a global one (*cf.* 3.2.3.2). This suggests that sustainable development will be insufficient until sustainable community development occurs. It is for this reason that sustainable community development is critical, not just for long-term sustainability, but also for fostering relationships between humans and the more-than-human (*cf*. 3.2.3.2). Ecojustice and ecojustice education, by implication, emphasise sustainable community development in order to nurture the relationship(s) between humans and the more-than-human. It can therefore be said that ecojustice does not aim to safeguard the environment to the same extent as it does to safeguard the connection (relationship) between humans and the more-than-human. These interconnections become damaged every time that we, as humans, use something without giving back, and our ties with the natural world become compromised (*cf.* 3.4.1). Ecojustice therefore aims to educate people on how they are related to, and dependent on, the more-than-human, as well as the advantages that this interdependence holds for

humans and the natural world (*cf.* 3.4.1). It is therefore my belief that ecojustice provides people with opportunities to adopt new perspectives on how they interact with the more-than-human. It is here that ecojustice education has a significant role to play. Education provides opportunities for theory to be put into practice, which in the case of ecojustice education, not only leads to the implementation of teachings on ecojustice, but it also challenges anthropocentrism (*cf.* 3.2.3.1). This is because as we, as humans, become more aware of the profound effects that our interactions with the more-than-human world have, our perceptions of the more-than-human are bound to shift, and with it, so too our behaviours (cf. 3.4.1). It is therefore my view that ecojustice education can have a positive impact on the relationship between humans and the more-than-human. From an ecojustice perspective, these relationships are strengthened by communitarianism. This is because it is believed that communitarianism offers a means of addressing social issues such as inequality, poverty, exploitation, and climate change. This is due to the belief that communitarianism promotes harmony within the community by shifting attention from the demands of the individual to those of the community (*cf*. 4.2). It can therefore be said that communitarianism consists of common understandings that exist within communities, which foster the relationships between people, and also between people and the more-than-human. In so doing, communal solidarity is promoted (cf. 4.2). In my opinion, the establishment and maintenance of meaningful relationships appear to be one of communitarianism's most important roles, from which shared knowledge and social networks might emerge. African communitarianism is a form of communitarianism that often manifests in the way that African communities live, and the values by which they live. This idea is based on the view that African communities are inherently communal and reflective of traditional African values such as *ubuntu*, *ukama,* the common good, goodwill, and interconnections (*cf*. 4.3). The objective of African communitarianism is the advancement of the prosperity of communities, as well as maintaining harmony within the communities (*cf.* 4.3). Taking into consideration the ability of African communitarianism for fostering harmonious interrelationships between humans and the more-than-human world, it is similar to ecojustice. I therefore found that ecojustice education can nurture harmonious relationship(s) between humans and the more-than-human, and that such interrelationships can be further strengthened by incorporating traditional African values into teaching.

6.3.4. CHAPTER 5

I used Chapter 5 to explore the potential of South African curriculum statements for the promotion of harmonious more-than-human communal relationships (*cf.* 1.4.4).

A legislative foundation for education and the protection of the environment is provided by the *Constitution of the Republic of South Africa* (Act 108 of 1996), whose adoption marked the beginning of reforms that would eventually completely transform the country's education system. South Africa's education system is currently guided by the *National Curriculum Statement Grades R-12,* and it is also reflects the principles of the *Constitution* (1996). Both the *National Curriculum Statement Grades R-12* and the *Constitution* (1996) are based on the promotion of human rights, inclusivity, environmental justice, and social justice, and the acknowledgment of indigenous knowledge systems (*cf*. 5.6.1.3). It is said that these aims can be obtained by providing learners with meaningful knowledge, skills and values that are applicable to their personal lives, while keeping global imperatives in mind (*cf.* 5.6.1). By implication, the curriculum also takes global imperatives into consideration, whilst providing learners with knowledge that is relevant to local situations. The *Curriculum Assessment Policy Statements* (CAPS) is therefore reflective of educational content that is carefully selected to include teaching and learning approaches that can optimise the educational experiences of learners (*cf.* 5.6.1.1).

When it comes to the subject Natural Sciences (CAPS, 2014), specifically, I found that great emphasis is placed on increasing learners' understanding of the role that science plays in social justice and societal development, the necessity of responsibly applying scientific knowledge in the interests of society, the environment, and ourselves, as well as a science-based understanding of the consequences that our actions have on the natural world (*cf*. 5.6.1.1). It can therefore be said that Natural Sciences integrates science with ecology whilst also fostering an appreciation for the more-than-human. This can be attributed to the notion that scientific knowledge is based on factual information that can change people's views of the world (*cf.* 5.3.1). Here, it is important to note that a relationship with the more-than-human can further be strengthened when a person is able to understand the responsibility that they have toward, and show an appreciation of, the environment, and this this is possible with the implementation of environmental education and ecojustice (*cf*. 3.2.3). In my view, *CAPS for Natural Sciences Grade 7-9* (2014), does include components of environmental education,

and comprises of ecojustice elements. I discovered that Natural Sciences makes provision for analysing how different elements, such as habitat loss, extinction of species, and climatic or weather changes, affect ecosystems (*cf*. 5.6.1.1). For me, teaching learners about the damaging effects of human actions on the environment means that environmental education is implemented in the curriculum. By implication, I consider Natural Sciences to be an example of ecocentric teaching and learning that helps learners to develop an in-depth understanding of their environmental responsibilities (*cf.* 3.2.3). When ecojustice is substantiated in educational content, learner perspectives of themselves in relation to the more-than-human can change, and in doing so, it can also lead to the promotion of sustainable practices (*cf.* 5.6.1.2). However, in order to achieve the goals of ecojustice of improving the relationship(s) between humans and the more-than-human, it is imperative that educational experiences are related to learners' specific contexts. Here, great emphasis is placed on teachers and their ability to make learners' educational experiences more context-specific (*cf*. 5.6.1.2). In my view, the CAPS (2014) for *Natural Sciences Grade 7-9* is reflective of teachings on ecojustice. This is because the CAPS (2014) allows teachers to explore concepts and design and organise learning activities based on their unique local circumstances (*cf.* 5.6.1.2).

The notions of communitarianism and African communitarianism were also of particular importance in this study, as they assisted me in determining the extent to which the South African Curriculum Statements promote harmonious more-than-human communal relationships. I therefore drew of African thought because of the emphasis it places on the interconnectedness of all entities on Earth (*cf*. 4.1).

Based on the gathered data, it is my contention that CAPS (2014) has the ability to enable teachers to draw on cultural and environmental commons to discover community options for more sustainable living, which has the potential to produce in-depth knowledge of the more-than-human, and can lead to the nurturing of the relationship(s) between humans and the more-than-human (*cf*. 4.5). And I therefore conclude that the South African Curriculum Statements do have the potential to promote more-than-human communal relationships.

6.4. SUMMARY OF FINDINGS

Upon completion of the analysis of the *Constitution of the Republic of South Africa* (Act 108 of 1996), the *National Environmental Management Act* (Act 107 of 1998), and the *Curriculum Assessment Policy Statements for Natural Sciences Grade 7-9* (2014), a summary of my study's findings, are presented. These findings are based on the analysis done in Chapter 5, together with the literature review conducted in Chapters 2, 3 and 4. The study's findings are guided and presented by using the secondary questions set in Chapter 1 (*cf*. 1.3).

6.4.1. WHAT ARE THE IMPLICATIONS OF AN ANTHROPOCENTRIC WORLDVIEW FOR EDUCATION AND THE INTERCONNECTEDNESS BETWEEN HUMANS AND THE MORE-THAN-HUMAN WORLD?

This question was addressed by Chapter 2 of the study, with the aim to unpack the implications of an anthropocentric worldview for education and the interconnectedness between humans and the more-than-human world (*cf*. 1.4.1). The findings are presented per the documents and the policy that were analysed.

The *Constitution* (1996) is founded on specific values that pertain to human dignity, non-racialism, and non-sexism (*cf*. 5.5.1). In order to uphold these values, certain aims are set out by the *Constitution* (1996) (*cf*. 5.5.1). The *Constitution* (1996) aims to create a society founded on democratic values, social justice, and basic human rights. It further aims to enhance the standard of living for every person in South Africa, and develop the potential of every individual. From these aims it is apparent that the *Constitution* (1996) prioritises the well-being of the people of South Africa (*cf*. 5.3.1.2). The welfare of the people is further emphasised in Section 24 of the *Constitution* (1996), that advocates for the protection of humans from environments that are detrimental to their health, and environments where pollution and ecological degradation are present (*cf*. 5.5.1.1). It can be said that the *Constitution* (1996) provides national legislation to safeguard the environment. The *Constitution* (1996) is silent, however, when it comes to environmental remediation, if the environment and its resources are not safeguarded (*cf*. 5.5.1.2). I therefore believe that the *Constitution* (1996) does not focus as much on environmental commons as is needed to build a relationship between humans and the more-than-human (*cf.* 5.5.1.1). I further found that even though the *Constitution* (1996) does promote sustainability, it is done to

improve the quality of life of the people of South Africa, and not necessarily to preserve the environment for the sake of protecting the environment (*cf*. 5.5.1.2). The human-related relationships with the more-than-human world are unbalanced, and therefore indicative of anthropocentrism (*cf*. 2.4). Based on the continuous focus of the *Constitution* (1996) on the needs of humans, I found the *Constitution* (1996) to minimally promote human relationships with the more-than-human world, and it therefore is inherently anthropocentric. This is problematic, as anthropocentrism not only has the ability to affect everyday life, but also other laws and policies that stem from it (*cf.* 2.4).

The NEMA (1998) is considered to be a framework that allows for Section 24 of the *Constitution* (1996) to be enforced (*cf*. 5.3.1.2). This means that the NEMA (1998) provides guidelines for the ways in which the environment is protected in South Africa. From the descriptions presented in the NEMA (1998), it initially seemed that environmental management guidelines cater for the needs of people. This is because according to the NEMA (1998), people's needs are placed at the forefront of its concerns, as the environment is safeguarded for the people (*cf*. 5.2.2). However, the NEMA (1998) is also concerned with the well-being of the environment, as it centres on promoting sustainability (*cf.* 5.2.1.1.2). I, therefore, found that the most significant difference between the *Constitution* (1996) and the NEMA (1998), is that the NEMA (1998) focuses more on meeting the needs of the environment and environmental protection, whilst also taking the needs of humans into consideration in implementing environmental management (*cf*. 5.2.2.1). The *Constitution* (1996), on the other hand, focuses more on the person than the environment (*cf*. 5.2.1.1.2). I found that because the NEMA (1998) is indicative of such strong ecocentric values, the impact of anthropocentrism from the *Constitution* (1996) is weakened when it comes establishing interrelationships through education.

In South Africa, the curriculum in public schools consists of different CAPS (2014), which forms part of a larger legislative framework that is influenced by the *Constitution* (1996) and the NEMA (1998) (*cf*. 5.2.1). This comes as educational content is reflective of government imperatives. The *Constitution* (1996) and the NEMA (1998) therefore influenced the content found in the CAPS (2014) (*cf*. 2.4). This content, in turn, impacts the relationships that are cultivated between humans and the more-than-human. This is because of the impact of education on the worldviews of learners

regarding their relationship(s) with the more-than-human (*cf.* 2.5). I found that the CAPS (2014) is reflective of ecocentric values rather than anthropocentric values, and therefore causes positive relationships to be fostered between humans and the more-than-human (*cf*. 5.3.1.2). If anthropocentrism was foregrounded more strongly in the two analysed documents, namely the *Constitution* (1996) and the NEMA (1998), it would have the potential to significantly impact education in the country (*cf.* 2.4). This is because the presence of anthropocentrism in education continues to reinforce existing human behaviour toward the more-than-human, and unbalanced interrelationships, which in turn also intensifies the environmental issues that the world is faced with today (*cf.* 2.4).

6.4.2. WHAT ARE THE EDUCATIONAL IMPLICATIONS OF A SHIFT FROM AN ANTHROPOCENTRIC TO AN ECOCENTRIC WORLDVIEW FOR ESTABLISHING A RELATIONSHIP BETWEEN HUMANS AND THE MORE-THAN-HUMAN?

This question responds to the aim of foregrounding the educational implications of a shift from an anthropocentric to an ecocentric worldview for establishing relationships between humans and the more-than-human world (*cf*. 1.4.2). The conclusions that have been drawn are presented in accordance with the examined documents and policy.

From the analysis, I gathered that the *Constitution* (1996) focuses on anthropocentric views (*cf*. 5.5.1.1). Education is one of the founding provisions in the *Constitution* (1996), and is considered to be an integral part of upholding its values and achieving its aims (*cf*. 5.5.1). However, when it comes to education, the *Constitution* (1996) only mentions the right to access education (*cf*. 5.5.1.1). I was therefore unable to determine whether the educational right(s) reflected in the *Constitution* (1996) are anthropocentric or ecocentric in nature (*cf*. 5.5.1). Because I found the *Constitution* (1996) to be generally anthropocentric, I am able to assume the position that the promotion of educational rights of the *Constitution* (1996) also promote anthropocentrism. Anthropocentrism is hugely problematic, because of its resultant environmental destruction (*cf*. 2.4). A transition from an anthropocentric to an ecocentric worldview is therefore needed in reaction to anthropocentrism (*cf.* 2.5.3). The NEMA (1998) is able to contribute to such a shift (*cf*. 5.2.2). This is because of the environmental management strategies that the NEMA (1998) put into place to

serve the physical, psychological, developmental, cultural and social interests of the people (*cf*. 5.2.2). This is done though specific regulations set out by the NEMA (1998). In order to align with the *Constitution* (1996), these regulations pertain to dignity, equality, and freedom (*cf.* 5.3.1.1). It is therefore that I found sustainable and democratic practices to be promoted by the NEMA (1998) (*cf*. 5.5.2.2). This is significant, as these practices are reflective of earth democracies, and determine the ways in which the more-than-human is treated (*cf.* 3.4.2.2). The presence of earth democracies encourages sustainability practices and development (*cf.* 5.6.1.2). I, therefore, discovered that a shift from an anthropocentric worldview to an ecocentric worldview encourages sustainability practices, and in doing so, promotes the relationship between humans and the more-than-human. One of the ways in which sustainability can be promoted is through education, and the implementation of a curriculum that is reflective of ecocentric values (*cf*. 1.2).

In terms of the CAPS (2014) for *Natural Sciences Grade 7-9*, I realised that the rendering of scientific information is used to provide learners with knowledge that have the ability to change their views of the world (*cf.* 5.3.1.2). The aims of CAPS (2014) also revolve around the ways in which scientific knowledge is implemented (*cf*. 5.3.1.2). I found that learners are encouraged to participate in investigations that analyse issues and make use of practical skills to resolve environmental and social issues (*cf*. 5.3.1.2). Taking such a scientific approach to education means that specific attitudes and values are cultivated amongst learners. These values include respect and care for the more-than-human, and also form part of ecocentric values (*cf.* 2.5.2). When attitudes toward the more-than-human centre on respect, a relationship between humans and the more-than-human is nurtured (*cf.* 3.3). Based on this information, it is my contention that the relationship between humans and the more-than-human can be nurtured when ecocentric values are encouraged. I, therefore found ecocentric values to be encouraged in the CAPS (2014), which nurture the relationship between humans and the more-than-human, and can be ascribed to a shift from anthropocentric to ecocentric worldviews in education.

6.4.3. HOW CAN ECOJUSTICE AND ECOJUSTICE EDUCATION BE RECONCEPTUALISED FOR THE NURTURING OF MORE-THAN-HUMAN COMMUNAL RELATIONSHIPS?

This question addressed issues such as the ways in which ecojustice and ecojustice education can be reconceptualised to nurture more-than-human communal relationships (*cf*. 1.4.3).

Ecojustice has the ability to help people recognise the interdependence of communities and broader ecological systems (*cf*. 5.2.2). However, from an ecojustice perspective, remediation in terms of environmental damage caused by humans, is crucial for maintaining positive interrelationships between humans and the more-than-human (*cf.* 5.5.1.2). The *Constitution* (1996) centres on creating a society that upholds social justice, democracy, and fundamental human rights (*cf*. 5.3.1.2). These rights are encompassed in the *Bill of Rights* of the *Constitution* (1996), and pertain to education and the environment. It is said that social justice and environmental prosperity are interconnected, and that ecojustice plays an important role in realising this connection (*cf*. 5.2.2). Based on the lack of remediation practices stipulated by the *Constitution* (1996), I found the *Constitution* (1996) to be anthropocentric in nature (*cf*. 5.5.1.1). Even though the *Constitution* (1996) highlights the importance of social justice, not enough emphasis is placed on environmental prosperity, and it is therefore found that the *Constitution* (1996) itself does not endorse ecojustice (*cf*. 5.5.1.1). It therefore also does not nurture the relationship between humans and the more-than-human.

The NEMA (1998) does however, acknowledge the importance of remediation practices, and is therefore able to encourage relationship(s) between humans and the more-than-human (*cf*. 5.2.2). Remediation practices are reflected in the NEMA's (1998) environmental development strategies (*cf*. 5.2.1.1.2). It is therefore that I found the NEMA (1998) to encourage ecojustice. From an ecojustice perspective, education has the ability to combine democracy and ecology to improve the relationship between humans and the more-than-human (*cf*. 5.5.1.2). Positive interrelationships between humans and the more-than-human are pivotal in improving people's quality of life, as well as improving the condition of the more-than-human (*cf*. 3.4.5). The findings suggest that these interrelationships emerge from sustainable and democratic

practices that are expressed in ecojustice and taught through education (*cf*. 5.3.1.2). I thereby found that because the NEMA (1998) promotes sustainable and democratic practices, it is also reflective of ecojustice, and therefore has the ability to nurture the relationship between humans and the more-than-human through ecojustice education.

In terms of the CAPS (2014), the curriculum is based on principles that inspire social change, active and critical learning, progression, human rights, inclusivity, environmental and social justice, and honouring indigenous knowledge systems (*cf.* 5.3.1). I, therefore, found that the CAPS (2014) aligns with the values of the *Constitution* (1996) in equipping learners with critical thinking skills. The difference between the *Constitution* (1996) and the CAPS is that the CAPS (2014) not only emphasises the importance of social justice and indigenous knowledge, it also promotes environmental justice (*cf*. 5.3.1). I discovered that social justice, indigenous knowledge, and environmental justice, are components found in ecojustice that have the ability to nurture the relationship(s) between humans and the more-than-human (*cf*. 3.4). I further determined that the components of ecojustice are also taught in education (*cf*. 3.4.5). This is because Natural Sciences encourages the implementation of community-based learning (*cf*. 5.5.1.2). This is imperative for teaching learners about their ethical responsibilities towards their communities (*cf*. 5.5.1.2). From an ecojustice perspective, communities not only consist of humans, but also of the more-than-human (*cf.* 3.4.1). In teaching learners about their ethical responsibilities towards their communities, it also teaches them how to harmoniously co-exist with the more-than-human. I found that CAPS (2014) for *Natural Sciences Grade 7-9* does contain ecojustice components, and therefore also promotes more-than-human relationships.

6.4.4. WHAT IS THE POTENTIAL OF SOUTH AFRICAN CURRICULUM POLICY STATEMENTS FOR THE PROMOTION OF HARMONIOUS MORE-THAN-HUMAN COMMUNAL RELATIONSHIPS?

In this section I explored the potential of South African curriculum statements to promote harmonious more-than-human communal relationships (*cf.* 1.4.4).

Communal relationships arise from a partnership where one of the parties is in need, and the other party responds to that need out of concern for the well-being of the first party (*cf.* 3.3). I found that the notion of harmonious more-than-human communal relationships is rooted in African communitarianism, and that it is concerned with

acknowledging, and acting on, the needs of other entities in order to promote their well-being (*cf*. 4.3). Morality, common good, goodwill, *ubuntu*, and *ukama* are traditional African communitarian values that are ingrained in African culture and are mirrored in communal relationships (*cf.* 1.6.3.2). It can therefore be said that African communitarian values are reflected in communal relationships, and are guided by the need of all entities that form part of a community, and not just the needs of the individual. Communal relationships are therefore also indicative of the acknowledgment of the interdependence of humans and the more-than-human (*cf*. 1.6.3.2). As the CAPS (2014) acknowledges the interdependence between people and their communities, I found that the CAPS (2014) encourages more-than-human communal relationships (*cf*. 5.6.1.2).

The *Constitution* (1996) mandates the recognition of cultural differences in order to ensure the dignity, equality, and freedom of the people. According to the *Constitution* (1996), the cultural rights of all people are protected, and no person may be discriminated against on the basis of their culture (*cf.* 5.2.1.1). All cultures, and the cultural lives that South Africans choose to live, must therefore be respected (*cf.* 5.2.1.1). I therefore found that the *Constitution* (1996) protects and respects people's cultural rights, and embodies traditional African communitarian values like morality, common good and goodwill (*cf*. 5.1). However, I did not find the *Constitution* (1996) to be indicative of values like *ubuntu* and *ukama,* which means that the *Constitution* (1996) does not promote more-than-human communal relationships. In comparing the *Constitution* (1996) to the CAPS (2014), I found the CAPS (2014) to embody African communitarian values, which in turn promotes harmonious more-than-human communal relationships (*cf.* 5.6.1.3). However, even though the *Constitution* (1996) itself does not directly promote more-than-human communal relationships, the enforcement of the educational right(s) of the *Constitution* (1996) ensure that learners in public schools have access to the CAPS (2014). This implies that the *Constitution* (1996) indirectly provides learners with the opportunity to foster a relationship with the more-than-human through the implementation of the CAPS (2014).

The NEMA (1998) is considered to be an integrated approach to the ways in which the environment is managed, and is concerned with recognising that all elements of the environment are linked and interrelated, and impact on one another (*cf*. 5.2.2.1). I found that the NEMA's (1998) environmental management strategies are based on a

combination of existing and indigenous knowledge (*cf*. 5.2.2.1). Traditional African knowledge is derived from African communitarian values that focusses on the spirit of community and harmony, which are also deeply rooted in African culture (cf. 4.2). Maintaining harmony within a community is imperative for the welfare of humans as well as the more-than-human, and it is dependent on people's realisation of their social responsibilities (*cf.* 4.3). Because the CAPS (2014) endorses ecojustice, it teaches learners about their ethical responsibilities toward the community (*cf.* 3.4.5). By implication, the CAPS (2014), like the NEMA (1998), recognises that human actions do influence community well-being.

Taking into consideration the notion of community and harmony, as framed in African communitarianism, I found that African communitarianism encourages harmonious more-than-human communal relationships. Because African communitarianism encourages such interrelationships, it can also be said that the NEMA (1998) encourages harmonious more-than-human communal relationships, because it embodies African communitarian values (cf. 5.5.1.3).

When it comes to indigenous knowledge systems, the NEMA (1998) is able to cultivate traditional African knowledge and values, and in doing so, is able to encourage relationships between humans and the more-than-human (*cf*. 5.2.2.1). When a curriculum exposes learners to indigenous knowledge, earth democracies can be advanced (*cf.* 3.4.2.2). Earth democracies involve decision-making processes in which decisions are taken in the interests of the more-than-human (*cf.* 5.6.1.3). Developing earth democracies leads to societies that respect non-human entities and can co-exist peacefully with their surroundings (*cf*. 5.6.1.3). I found CAPS (2014) for Natural Sciences to contain indigenous African knowledge, which allows for earth democracies to develop. When earth democracies are encouraged in the classroom, it leads learners to develop a sense of custodianship regarding the environment, and in doing so, also develop a relationship with the more-than-human. I therefore found that the CAPS (2014) have the potential to promote harmonious communal relationships (*cf*. 5.6.1.3).

6.5. SUGGESTIONS

Based on the findings and analysis sections of Chapters 2 – 5, I make two suggestions in this section that pertain to the strengthening of more-than-human communal relationships by means of the South African curriculum.

6.5.1. SUGGESTION ONE: INCLUDE AFRICAN COMMUNITARIAN PRINCIPLES INTO THE CURRICULUM

It is my view that the *CAPS for Natural Sciences Grade 7-9* uses factual, science-based information to influence learners' view(s) of the world, and combines science and ecology to enhance the relationship between humans and the more-than-human (*cf*. 6.3.4). According to the CAPS (2014), the knowledge reflected in Natural Sciences are based on science, and promotes an appreciation for the different cultural settings in which indigenous knowledge systems have evolved (*cf.* 5.3.1.2). This stems from the *National Curriculum Statement Grades R-12*, that emphasise the importance of acknowledging indigenous knowledge systems (*cf*. 5.6.1.3). Indigenous knowledge systems are important because they can address environmental problems, particularly those affecting the African continent (*cf*. 4.3). However, despite the emphasis that the *Constitution* (1996), the NEMA (1998) and the CAPS (2014) place on the acknowledgement of indigenous knowledge, I found little evidence of prescribed teachings on indigenous knowledge in the CAPS (2014) (*cf*. 6.3.4). To my understanding, the elements that underpin African communitarianism also serve as the foundation for an African environmental perspective, because of what indigenous knowledge systems reflect (cf. 4.3). It can therefore be said that an African environmental perspective is indicative of African communitarianism, but that crucial aspects of African communitarianism, such as religion and morality, only form part of the hidden curriculum (*cf*. 4.3). By implication, African communitarian principles are implicitly mirrored in the South African curriculum, but as they are not expressly taught, their significance is mostly only implied. It is therefore my view that more emphasis be placed on teachings on African cultures, religion and morality. In my opinion, the relationship between humans and the more-than-human can be further strengthened by the South African curriculum, by highlighting the core components of African communitarianism and including these in the explicit curriculum. It should not only remain part of the hidden curriculum (*cf*. 4.3).

6.5.2. SUGGESTION TWO: INTRODUCE ANTHTROPOCENTRISM INTO THE CURRICULUM

Even though I found that the curriculum does include components of teachings on ecojustice, I am also of the opinion that detailed teachings on anthropocentrism should be included in the explicit curriculum. From an ecojustice perspective, anthropocentrism causes various problems, not only for those who enforce it, but also for those who do not (*cf.* 2.3). This is because all other species and environments are considered to have no moral standing, because of the attitudes and ethics associated with anthropocentrism (*cf.* 2.3). It is therefore imperative that learners be educated on anthropocentrism. The findings suggest that the curriculum does expose learners to anthropocentrism to a certain extent, as they do learn about the environmental issues that the world is faced with, such as climate change (*cf.* 5.3.1.2). The curriculum also makes provision for teachings on sustainable development. However, in order for learners to better understand the magnitude of environmental issues, the implications of anthropocentrism on the environment cannot be the only aspect of anthropocentrism that learners are exposed to in education, and sustainable practices cannot be the only solution to these issues. Even though anthropocentrism and the solutions to anthropocentrism are very complex (*cf.* 2.3), I am of the opinion that more aspects of anthropocentrism can, and should, be dealt with in the curriculum to reinforce the relationship between humans and the more-than-human.

6.6. IN REFLECTION

I share my overall study-related experiences in this section. I start by outlining the strengths of the study, but is also critical to consider the challenges that I encountered over the course of three years of study. However, these challenges did not prevent me from completing the study, but rather helped me to grow and identify topics for possible future research. My gained strengths, as well as my challenges, aided me in reflecting on my scholarly and personal growth.

6.6.1. STRENGHTS OF THE STUDY

In reflection, I consider the research topic, namely *the potential of South African curriculum statements to promote more-than-human communal relationships from an ecojustice perspective*, as a strength. This topic can be distinguished from other research because of the limited number of studies that assume an ecojustice

perspective from which South African curriculum statements are viewed in exploring the extent to which communal relationships are encouraged within the curriculum. As this study was a desktop study, I made use of a literature review and document analysis, which enabled me to respond to the study's research objectives, and ultimately answer the main research question (*cf.* 1.3). As part of my literature review I did an in-depth analysis of concepts like anthropocentrism, ecocentrism, and African communitarianism. I also spent a great deal of time establishing the ways in which anthropocentrism and ecocentrism affect a person's views of the more-than-human, and the impact that that perception has on the environment and education.

This project taught me how to create an analysis framework from a literature review, as well as how to analyse policy documents. I also learned how to analyse documents using the themes produced from the framework for analysis, which was a new skill I developed that I never had.

6.6.2. CHALLENGES OF THE STUDY

Even though I had many positive experiences throughout my three-year research journey, there were a few challenges that hindered my progress. The first was that my assigned study supervisor retired one year after the commencement of the study, and it was truly an uncertain and unnerving time for me until the transitioning period was over and I settled in with my current supervisor. Another challenging factor for me was that I did not fully understand the enormity of the commitment needed to complete a Doctor of Philosophy degree, prior to commencement. As a full-time teacher and mother, it took a substantial amount of planning to work towards producing the final product within a set time, and I found time management to be a constant struggle. This can be partially ascribed to my struggle with conceptualising my research from a philosophical perspective. This is because I found the philosophical aspects of my study to be difficult to understand and interpret. Oftentimes, this led to me working slower than what I would have wanted to, and also led to my progress often being delayed. Working through all the available information, and choosing which aspects to focus on and which to ignore, also took a lot of time, and sometimes became overwhelming, disheartened. During these trying times the supervisor's guidance prompted me to continue to work hard, and for that, I will be forever grateful. I realised that becoming acclimated to constructive criticism as quickly as possible through the

remarks and direction of my supervisor, was beneficial for progress. I therefore discovered how to make informed decisions about what information to include and what to exclude. and I realised that good organisational skills were needed to successfully complete my research. I've therefore learned a variety of practical skills, such as categorising and organising articles for easy access.

6.7. LIMITATIONS AND OPPORTUNITIES FOR FUTURE RESEARCH

As this study was a desktop study, it had some limitations. The most notable constraint was that the collected data were limited to a literature review and a document and policy analysis. This is because of the nature of my study, and the fact that I had to rely on data produced only by the examination of texts. Even though the analysis produced a wealth of information, the addition of other qualitative data collection methods may have strengthened the study. It could therefore be worthwhile to do a similar study with participants to allow for the perspectives of a larger sample. Because the analysis related to the Curriculum Assessment and Policy Statement of only one specific subject, in one specific phase, namely Natural Sciences for the Senior (Grade 7-9) phase, there might be room for also analysing the CAPS (2014) of other subjects and other phases as well.

6.8. SCHOLARLY AND PERSONAL GROWTH

Reflecting on my educational journey from where I started as a first-year student at the University of the Free State in 2006, to where I found myself at the end of 2023, is unfathomable. The personal journey that my educational journey has led me on, has been unbelievably trying, but I could not be more proud of my attempt to take on this momentous task. I learned that a person is never too old to learn, and that you sometimes have to go beyond your comfort zone in order to better yourself and maybe even inspire others to try and do the same.

Through the course of this study, I experienced extremely trying times on a personal and professional level, but it was during these trying times that my supervisor’s guidance prompted me to continue to work hard, and for that I will be forever grateful.

On a scholarly level, the study made me realise that I have to use the knowledge that I gained to make changes within my immediate surroundings. This not only refers to my classroom, but also to my home, with my own children. I can change the ways in

which I view, and act towards, the more-than-human, and handle it with a bit more care. My hope is then that the children that I come in contact with will do the same. This comes as I am in a position to influence the ways in which children perceive, and act towards, their surroundings, which in turn can indeed promote the relationship between humans and the more-than-human. I am excited to use the information and skills that I learned throughout the course of the study, and apply it to my everyday life as a teacher and as a mother.

Aside from the essential skills that I accumulated throughout the research process, reading the work of academics, specifically relating to issues concerning the more-than-human, is something that I will continue to do. This comes as working on issues pertaining to the more-than-human prompted a renewed curiosity in me for exploring environmental issues and sustainability possibilities.

6.9. CONCLUSION

I undertook this study with the intention of exploring the potential of South African curriculum statements to nurture the relationship between humans and the more-than-human world from an ecojustice perspective. My interest was sparked by natural disasters, both globally and locally, that seemed to intensify and also seemed to be happening more frequently. This notion, together with my teacher's instincts to want to try and find answers and solutions to problems, lead me to my research question.

In this chapter I used the analysed policy documents, namely the *Constitution of the Republic of South Africa* (Act 108 of 1996), the *National Environmental Management Act* (Act 107 of 1998) and the *Curriculum Assessment Policy Statements* for *Natural Sciences Grade 7-9(2014)*, to make recommendations on how South African curriculum statements can nurture more-than-human communal relationships. I also summarised the previous chapters in order to comment on my research conclusions. At the end of the chapter, I identified the study's strengths, addressed the limitations and the opportunities it created for future research, and I reflected on the challenges I had while conducting the study. I also discussed how the research aided my academic and personal growth.

Chapter 1 of my study served as a guideline for the study. In this chapter, I mapped out the entire study, which provided me with the necessary guidance to know what to do in every chapter. In Chapter 2 I unpacked the implications of an anthropocentric

worldview for education, and the interconnectedness between humans and the more-than-human world in order to determine the implications of an anthropocentric worldview for education and the interconnectedness between humans and the more-than-human world. Chapter 3 was used to foreground the educational implications of a shift from an anthropocentric to an ecocentric worldview for establishing relationships between humans and the more-than-human world in contemplation of the educational implications of a shift from an anthropocentric to an ecocentric worldview. In Chapter 4 I explored the ways in which ecojustice and ecojustice education can be reconceptualised for the nurturing of more-than-human communal relationships. This was done in order to determine how ecojustice and ecojustice education could be reconceptualised to nurture more-than human communal relationships. Chapter 5 allowed me to explore the potential of the South African curriculum statements for the promotion of harmonious more-than-human communal relationships. This was done with the aim of discovering what the potential of South African curriculum policy statements is for the promotion of harmonious more-than-human communal relationship (*cf*. 1.3.4). Based on the findings, I discovered that it is possible for South African curriculum policy statements to promote harmonious more-than-human communal relationships. In the last chapter, I was able to comment and make suggestions on the potential of the South African curriculum statements to promote harmonious more-than-human communal relationships.

Based on my study's findings from the document and policy analysis that I did, I proposed two suggestions that can complement the CAPS (2014) in order to encourage more-than-human communal relationships. The first suggestion is to includes adding African communitarian principles into the explicit curriculum, and the second is to also expose learners to the notion of anthropocentrism through the explicit curriculum.

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APPENDIX A: ETHICAL CLEARANCE

UNIVERSITY OF THE FREE STATE
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UFS UV

GENERAL/HUMAN RESEARCH ETHICS COMMITTEE (GHREC)

02-Sep-2021

Dear Mrs Nastassja Von Solms

Application Approved

Research Project Title:
The potential of South African curriculum statements to promote more-than-human communal relationships: An ecojustice perspective

Ethical Clearance number:
UFS-HSD2021/1360/21

We are pleased to inform you that your application for ethical clearance has been approved. Your ethical clearance is valid for twelve (12) months from the date of issue. We request that any changes that may take place during the course of your study/research project be submitted to the ethics office to ensure ethical transparency. furthermore, you are requested to submit the final report of your study/research project to the ethics office. Should you require more time to complete this research, please apply for an extension. Thank you for submitting your proposal for ethical clearance; we wish you the best of luck and success with your research.

Yours sincerely

Dr Adri Du Plessis
Chairperson: General/Human Research Ethics Committee

Dr Adri du Plessis
Digitally signed by Dr Adri du Plessis
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APPENDIX B: FRAMEWORK FOR ANALYSIS

ANTHROPOCENTRISM		
ENVIRONMENT		
1. DESTRUCTION	**REFERENCE**	**NOTES**
Is there evidence of environmental destruction in texts?	*cf.* 2.3; 2.4	Intentional/ unintentional destruction of natural environment. Ecocide. Deforestation; overfishing; pollution
Which degrading human-related actions are evident from texts?	*cf.* 2.3; 3.4.1	Land usage. Land is used for agriculture, livestock production and mining Deforestation; overfishing; pollution
Are ecological problems present and acknowledged in texts?	*cf.* 2.3; 2.4	Biodiversity is reduced and ecosystems are weakened
Does a connection exist between environmental issues and democratic practices?	*cf*. 2.4	Democratic practices and industrialization is interrelated.
2. REMEDIATION		
Is there evidence of environmental problem-solving?	*cf.* 1.1; 2.4; 3.2.3	Worldviews; Multidisciplinary education
Is there evidence of accountability?	*cf*. 3.4.1	Humans are held morally accountable.
Is there and acknowledgement of care for the environment?	*cf.* 2.2.1	Improvement of well-being of humans.
Is reference made to ecological sustainability?	*cf.* 3.3; 3.4.1	When there is a shift from anthropocentric to ecocentric tendencies; implementation of ecojustice education
3. MORE-THAN-HUMAN		
Do the texts acknowledge and/ or refer to the more-than-human?	Throughout chapters 1 to 5	
How is the more-than-human represented?	*cf*. 1.1; 2.2.1	Known as the environment: a place where people live; as non-living things
Which interests does the more-than-human have?	*cf*. 3.4.1	To be respected and treated the same as humans; not treated with violence

Who or what is considered to form part of the more-than-human?	*cf.* 2.2.1;	The (natural) environment, non-humans
In which ways are the interest of the more-than-human promoted?	*cf.* 3.2; 3.2.3; 3.4.5	Through ecocentric worldviews, ecojustice and ecojustice education
How does the more-than-human relate to humans?	*cf.* 3.4.4; 3.4.5	By the interdependence of humans and the more-than-human
ECOCENTRISM		
1. DEMOCRATIC PRACTICES		
Are democratic practices referenced?	*cf.* 3.4.5.1; 4.3	Sustainable and democratic communities.
What is the meaning of democracy in texts?	*cf.* 5.2.1	Freedom, equality and human dignity
Do democratic decisions consider the more-than-human?	*cf*. 5.2.1	Environmental law in the Constitution of the RSA
Are environmental issues and democratic practices considered to be interrelated?	*cf.* 1.2	Sustainability, policies and actions are interrelated.
2. DEMOCRATIC RIGHTS		
Do democratic rights include more-than-humans?	*cf.* 5.2.1; 5.2.2	Constitution of the RSA and the NEMA
Are the rights of the more-than-human promoted?	*cf.* 3.4.1; 5.2.2	National Environmental Management Act
Which similarities exists between the right of humans and that of the more-than-human?	*cf.* 3.2; 3.4; 3.4.1	Humans and the more-than-human are considered right-holders (from an ecocentric view)
Which differences exists between the rights of humans and that of the more-than-human?	*cf*. 5.2.2	Democratic rights of humans are superior to those of the more-than-human
3. SOCIAL JUSTICE		
What does social justice entail?	*cf*. 3.3	Fairness between individuals in terms of opportunities, wealth and privilege
Do the texts encourage social justice?	*cf*. 3.4.1	Preservation of ecosystems needed for societies to thrive
Can social justice pertain to the more-than-human?	*cf*. 1.6.3.1; 3.4.1	Social injustices are compared to environmental injustices

Do societies consider the needs of humans and that of the more-than-humans to be equal?	*cf.* 1.6.1	Needs of societies are prioritized over that of the individual
4. DISCRIMINATION		
Is there evidence of discrimination towards humans?		
Is there evidence of discrimination towards the more-than-human?	*cf*. 2.2.1	Human needs are prioritized over that of the more-than-human
AFRICAN COMMUNITARIANISM		
AFRICAN HUMANNESS		
1. CULTURE		
Are cultural practices referenced in texts?	*cf.* 4.2	Traditions
Is there an awareness of African humanness?	*cf.* 4.3	As reflected in ubuntu and through morality
Is mention made of indigenous cultures in the texts?	*cf.* 3.4.2.2	Reference is made to the Khoisan
Is there evidence of cultural engagement between human and more-than-human?	*cf*. 4.2; 4.3	Community; communitarianism; internal good
Are more than one cultures acknowledged?	*cf.* 4.6	African education models and Western education models are mentioned
2. SOCIAL RELATIONS		
Are references made to social practices?	*cf*. 3.4.2	Informal norms and values, also known as social practices are used as a governing mechanism
How are the relationships between humans and the more-than-human portrayed?	*cf.* 2.1.1; 2.2.2; 2.4; 2.5.2; 3.2; 3.2.2; 3.2.3	Ecocentric / ecojustice view: Humans and the more-the-human hold intrinsic value
Does a respect exist for humans and the more-than-human?	*cf*. 2.5; 3.2	The needs of the more-than-human is also respected
What is the extent of interaction between the human and the more-than-human?	*cf*. 2.3; 2.5	Positive interactions. The type of interaction is dependent on the relationship
Are there social conflicts in the texts?	*cf.* 1.1	Constant conflict against the destruction and disruption of non-living things

To which extent is environmental relations integrated with social relations?	*cf.* 1.6; 2.2.3; 2.4;	Social justice and ecological prosperity are considered to be inseparable
3. UBUNTU AND UKAMA		
Is ubuntu used in a direct or indirect way?	*cf.* 1.6.3.1; 4.3	Indirectly. The values of ubuntu are reflected in communal relationships
Is ukama used in a direct or indirect way?	*cf.* 1.6.3.1; 4.3	Indirectly. The values of ukama are reflected in communal relationships.
How is the relationship between humans and the more-than-human portrayed?	*cf.* 4.2; 4.3	As imperative to enable humans and the more-than-human to thrive. An emphasis is placed on the importance of interrelationships
Are relationships between the human and the more-than-human cultivated?	*cf*. 4.3	It forms part of cultural values rooted in African life and an emphasis is placed on upholding cultural values
Is there a respect for humans and the more-than-human?	*cf.* 3.4.5	An acknowledgement of healthy mutual relationships that are needed for sustainability
Do humans care for themselves?	*cf.* 4.1	From an anthropocentric view, human needs are superior
Do humans care for the more-than-human?	*cf.* 4.1; 4.2	From an ecocentric/ ecojustice view, the needs of the more-than-human are considered equally important as those of humans. From a communitarian view, the needs of the community as a whole as prioritized

APPENDIX C: LANGUAGE EDITING CONFIRMATION

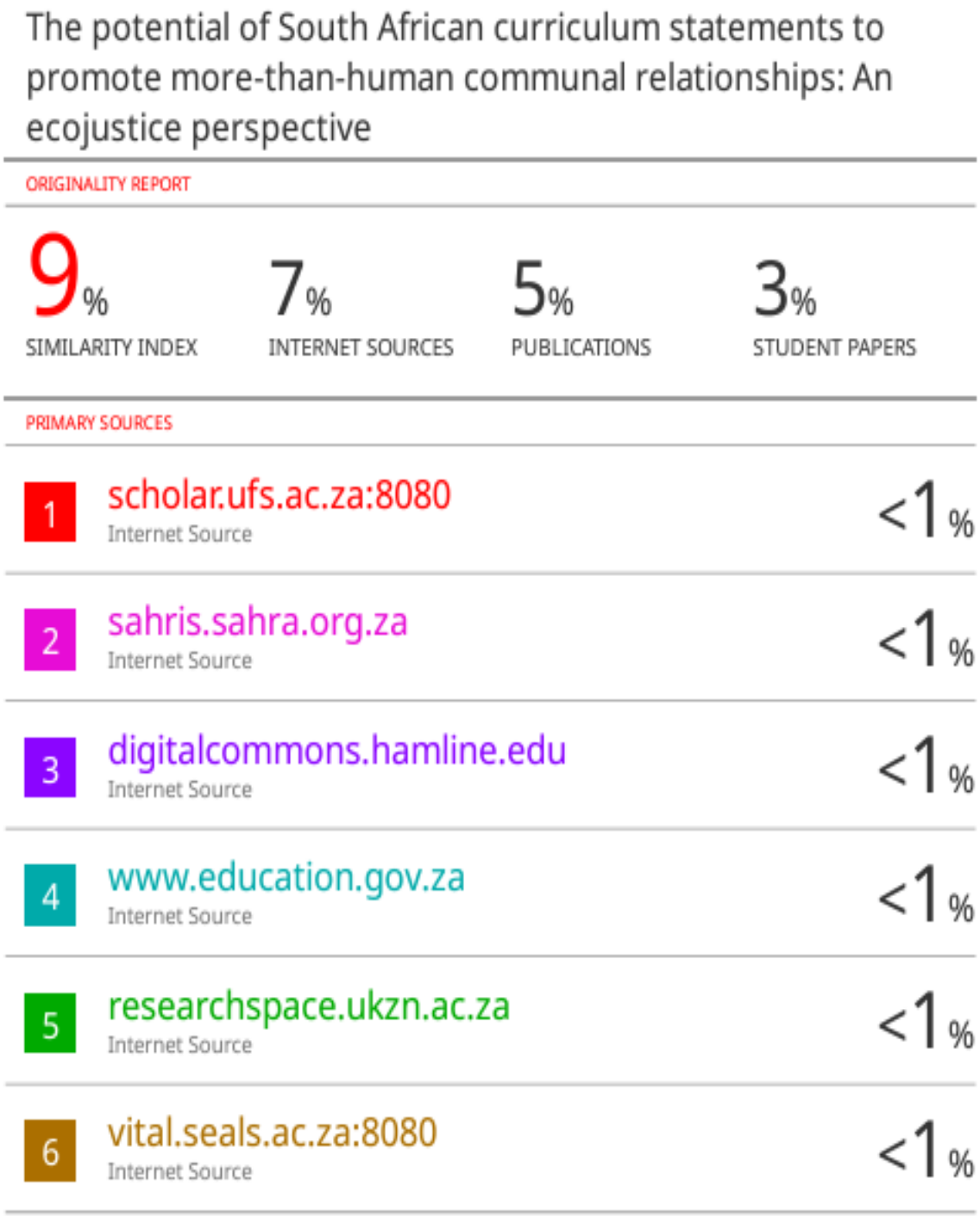
To whom it may concern

This is to state that the PhD study titled *The potential of South African curriculum statements to promote more-than-human communal relationships: An ecojustice perspective* by Nastassja von Solms has been language edited by me, according to the tenets of academic discourse. The final responsibility for applying any proposed corrections lies with the author.

Annamarie du Preez
B.Bibl.; B.A. Hons. (English)
0837641864

29-11-2023

APPENDIX D: TURNITIN REPORT



The potential of South African curriculum statements to promote more-than-human communal relationships: An ecojustice perspective

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